

SEPTEMBER
1952

INNOVAL BEST FOR ALL ELECTRONIC APPLICATIONS

Amateur Radio

JOURNAL OF
THE WIRELESS
INSTITUTE OF
AUSTRALIA

For the Experimenter
and Radio Enthusiast



9_{D.}

Registered at G.P.O., Melbourne, for
transmission by post as a periodical.

It's the valve
that makes
the music

PHILIPS

INNOVAL

"HAM" RADIO SUPPLIERS

(KEN MILLBOURN, PROP.)

5A Melville Street, Hawthorn, Victoria

East Kew Tram Passes Corner, opposite Vogue Theatre.

Phone: Hawthorn 4465

Money Orders and Postal Notes payable North Hawthorn P.O. Packing Charge on all goods over 10 lbs. in weight, 5/- extra.

New Valves Just Arrived

807, American	27/6	35T Eimac	£4	954 American	12/6	EF50	12/6
834, R.C.A.	£1			955 "	12/6	RL18	13/-

Tested Valves from Disposal Gear

1A3	10/-	1S5	10/-	6F5	10/-	6N7	10/-	7G7	10/-	12SK7	10/-	2051	10/-
1G4	7/6	1T4	10/-	6F6	10/-	6R7	10/-	7N7	10/-	12SQ7	10/-	7193	5/-
1K7	7/6	3A4	10/-	6F8	10/-	6SH7	5/-	7R7	10/-	12SR7	10/-	809	50/-
1L4	10/-	3B7	5/-	6G6	10/-	6SH7GT	4/-	7W7	10/-	1201	5/-	813	60/-
1L5	7/6	3Q5	10/-	6G6G	10/-	6SL7	15/-	7Y4	10/-	1203A	5/-	832	50/-
1LC6	5/-	6AC7	15/-	6H6	5/-	6SN7	15/-	12A6	10/-	1294	5/-	956	10/-
1LD5	5/-	6B4	10/-	6J5GT	10/-	6SS7	10/-	12AH7	10/-	1299	5/-	9004	10/-
1LH4	5/-	6C5	10/-	6K6	10/-	7A6	10/-	12H6	10/-	14A7	5/-	OA4	10/-
1LN5	5/-	6C6	7/6	6K7G	7/6	7A8	10/-	12J5	10/-	1603	10/-	TZ20	40/-
1R5	10/-	6C8	10/-	6K8	10/-	7C7	10/-	12SA7	10/-	1629	10/-	VR65A	2/6
				6L7	10/-	7F7	10/-	12SG7	10/-				

Command Receivers, range 6 to 9 Mc. Complete with Valves £7/10/- each

New American Command Twin Receiver Rack, contains two relays, Phone Jack, and Toggle Switches. Postage free Price 17/6

American Radio Control Tuning Dials, contains one 0-5 Ma. Meter, Volume Control, Dial Light, Xaxley Switch and Phone Jack Postage Free, Price £15/5/-

Hammarlund BC191E Plug-in Coil Units, contains two variable condensers, coil-formers, fixed condensers, etc., complete, £3/10/- Less vernier dial, £3

TA12D Transmitter, complete with Valves £17/10/-

0-500 Microamp. Meters, disposals equipment 22/6

New Meters—0-1 Ma. full scale, square type 27/6

New Meters—0-5 Ma. full scale, square type 27/6

New Meters—0-40, 0-120 Ma., separate connection, 27/6

New Meters—0-100 Ma. full scale, 2" mounting, 32/6

New Meters—0-150 Ma. full scale, square type 27/6

Six volt Baynot Type Dial Lamps 1/- each

EF50 Sockets, Ceramic 2/6 each

Lockalt Sockets 1/6 each

Chassis Feed Through Insulators 9d, each

Eddystone 54 pF. silver plated wide-spaced Cond. 15/-

Solor 28 pF. silver plated wide-spaced Condenser 12/6

Two Condensers approx. 50 pF., screwdriver adjustment, mounted on flat ceramic block 4/- each

20 ft. lengths of 1/8-inch Co-ax. Cable 10/-

Co-ax. Connectors, male and females, small Pi type, new 3/- pair

AMR200 (copy of Hammarlund Super Pro). 14 valves, separate band spread, variable xtal and i.f. channel, band coverage 1300 Kc. to 30 Mc., mounted in grey crackle finished case.

AR8 Radio Receiver, band coverage 150 Kc. to 25 Mc., complete with A.C. Power Supply and Speaker, £27/10/-; less Power Supply and Speaker £20

Command Transmitters, ideal for V.F.O. Units. Contains two 1625 (final), one 1626 (V.F.O.), one 1629 (magic eye). Ranges: 4 to 5.3 Mc., 5.3 to 7 Mc. Easily converted to cover Ham bands. Also few only 7 to 9 Mc. slightly damaged £7/10/-

Philips' Cathode Ray Oscilloscope, Type TA55, uses 902 C.R.O., condition as new. As traded £22/10/-

Palec Valve Tester, ET3. Complete with Book, £27/10/-

LARGE STOCK OF CRYSTALS AVAILABLE

1,000 Kc. Crystal mounted in case with 10 pin valve socket and 4 pin Continental power plug £2
Marker Crystals, 3.5 Mc., 5 Mc., and 10 Mc. Crystals ground to any frequency. Complete with holder, £2.
Following is a list of Crystal Frequencies available for immediate delivery at £2 each:—

2258 Kc.	7000 Kc.	7044 Kc.	8025 Kc.
2282 Kc.	7004 Kc.	7047 Kc.	8035 Kc.
3500 Kc.	7006.2 Kc.	7050 Kc.	8090 Kc.
3506 Kc.	7008.5 Kc.	7054 Kc.	8126 Kc.
3509.1 Kc.	7012 Kc.	7058 Kc.	8150 Kc.
3511.2 Kc.	7015 Kc.	7058.5 Kc.	8155.71 Kc.
3573 Kc.	7016 Kc.	7062 Kc.	8161.538 Kc.
3695 Kc.	7020 Kc.	7063 Kc.	8171.25 Kc.
3460 Kc.	7021.5 Kc.	7110 Kc.	8182.5 Kc.
5780 Kc.	7032 Kc.	7129 Kc.	8183.5 Kc.
6000 Kc.	7033 Kc.	7175 Kc.	8318 Kc.
6235 Kc.	7039 Kc.	7200 Kc.	
	7041 Kc.	8021.5 Kc.	

WANTED TO BUY—RADIO PARTS, VALVES, TRANSFORMERS, RECEIVERS, TRANSMITTERS, ETC.

AMATEUR RADIO

EDITOR:

T. D. HOGAN, VK3HX,
Telephone: UM 1732.

MANAGING EDITOR:

J. G. MARSLAND, VK3NY.

TECHNICAL EDITOR:

J. C. DUNCAN, VK3VZ.

TECHNICAL STAFF:

L. B. FISHER, VK3AFF.

COMPILATION:

R. W. HIGGINBOTHAM, VK3RN.

CIRCULATION:

I. K. SEWELL, VK3IK.

ADVERTISING REPRESENTATIVE:

W. J. LEWIS,
20 Queen St., Melbourne, C.I.
Telephone: MU 5154.

PRINTERS:

"RICHMOND CHRONICLE,"
Shakespeare St., Richmond, E.I.
Telephone: JB 2419.

MSS. and Magazine Correspondence should be forwarded to the Editor, "Amateur Radio," Law Court Chambers, 191 Queen St., Melbourne, C.I., on or before the 8th of each month.

Subscription rate in Australia is 9/- per annum in advance (post paid) and A10/6 in all other countries.

Wireless Institute of Australia
(Victorian Division) Rooms' Telephone is FJ 6997.

WI BROADCASTS

All Amateurs are urged to keep these frequencies clear during, and for a period of 15 minutes after, the official Broadcasts.

VK3WI: Sundays, 1100 hours EST, 7146 Kc. and 2000 hours EST 50 and 144 Mc. No frequency checks available from VK3WI. Intrastate working frequency, 7125 Kc.

VK3WI: Sundays, 1130 hours EST, simultaneously on 3073 and 7146 Kc. and re-broadcast on 50 and 144 Mc. Intrastate working frequency 7125 Kc. Individual frequency checks of Amateur Stations given when VK3WI is on the air.

VK1WI: Sundays, 0900 hours EST, simultaneously on 7146 and 14342 Kc. 7065 Kc. channel is used from 0930 to 1030 hours each Sunday for the W.I.A. country hook-up. No frequency checks available.

VK3WI: Sundays, 1000 hours SAST, on 7146 Kc. Frequency checks are given by VK3DW by arrangements only on the 7 and 14 Mc. bands.

VK3WI: Sundays, 0930 hours WAST, on 7146 Kc. No frequency checks available.

VK1WI: Sundays, at 1000 hours EST, on 7146 Kc. and 146.5 Mc. No frequency checks are available.

Published by the Wireless Institute of Australia,
Law Court Chambers, 191 Queen Street,
Melbourne, C.I.

EDITORIAL



Members of the Wireless Institute of Australia living in country areas may be able to erect large and effective antennae to the discomfort and envy of their city brethren, but they suffer from the disadvantage of not being able to attend monthly meetings of their Division.

At these meetings, much information is given to members concerning the activities of their own Division and the activities of the Institute as a whole. Although much of this information is disseminated in weekly broadcasts and in this magazine, quite a lot of information never reaches the members who cannot attend meetings. Thus a position is created where members do not know what is going on and why.

It is of vital interest to all members to know what is going on because the growth of any organisation is dependent upon the amount of interest it creates amongst its members, and the recruiting of new members is difficult or well nigh impossible, in an organisation which is almost stagnant.

With a view to creating and stimulating interest in our organisation,

Federal Executive believes that, in addition to weekly broadcasts and the news distributed at meetings, members should have available to them some record of what is being done by Federal Executive on their behalf. Although this information is available at monthly meetings, the country member does not receive it and is, therefore, largely without information.

This and future issues of the magazine will contain a resume of the minutes of the proceedings of Federal Executive by which means it is hoped that members will be better informed than they have been in the past.

Furthermore, members will be able to judge whether or not and along what lines many matters, some of them contentious, are being handled.

Although only a resume can be given owing to the space factor, Federal Executive feels that the information provided will assist members to understand the machinery by which the Institute works and to have first hand information on what is afoot.

FEDERAL EXECUTIVE.

THE CONTENTS . . .

Effects of Electricity on the Human Body	2	Federal Executive Proceedings ..	8
Economical Design for a Simple Standby	4	Amateur Call Signs	9
A Young Man's Game?	5	Television Questions & Answers ..	9
Radio Control of Model Aircraft	6	Fifty Megacycles and Above	10
Radiotron 6BV7	7	DX Notes by VK4QL	11
Amateur Radio Communications throughout June-August N.S.W. Floods	8	Prediction Chart for September ..	11
		Federal, QSL, and Divisional Notes	12

Effects of Electricity on the Human Body

By W. B. KOUWENHOVEN,* Fellow A.I.E.E.

One of the causes of death on this planet that has existed since the time of creation is lightning. The true nature of this cause, however, was not recognized until the researches of Benjamin Franklin, 1749 to 1752, established the fact that a lightning stroke was an electric discharge on a grand scale and involved the flow of an electric current.

In 1753 one of the experimenters in this field, Richmann, of St. Petersburg, was killed by a discharge. The first man-made electric shock of which we have any record occurred in Holland in 1746, when two Dutch physicists unintentionally discharged a Leyden jar through their bodies. The first reported death due to man-made electricity occurred in France in 1879, and the second in Scotland a year later. Today in the United States and Canada the number of fatalities annually ascribed to electricity is seven per million of population, and approximately half of the accidents reported are fatal. In the utility field the number of deaths of employees ranges from 70 to 80 per year.

FACTORS

In determining the effects of the passage of an electric current through the body there are certain factors that should be taken into consideration. They are—

1. Type of circuit with which contact is made.
2. The voltage of the circuit.
3. The resistance offered by the human body.
4. The value of the current that flows through the tissues.
5. The pathway of the current through the body.
6. The duration of the contact.

These six factors are related to each other and no attempt has been made to arrange them in the order of their importance. In some instances it is impossible to discuss a single factor separately.

The Circuit. The type of circuit and its voltage, with which contact is made, have a profound effect upon the resulting injury. D.c. circuits do not produce the strong contraction of the muscles that is found with alternating current, and in general the sensation produced by direct current is greatest when the circuit either is made or broken. Low voltage d.c. circuits are not as dangerous as the corresponding a.c. circuits. In fact, there is only one case on record that the author has knowledge of where a man was killed on a 120 volt d.c. circuit in which there was no possibility of a high induced voltage due to the opening of a field circuit or similar cause. On the other hand, contact with high-voltage d.c. circuits is more apt to be fatal than contact with alternating circuits of the same voltage. In cases of lightning shock the musculature contraction is usually absent.

Amateurs generally take far greater risks than they should when handling high voltages in their transmitters, and in reading this article, for which we are indebted to the State Electricity Commission, take particular note of the section on ventricular fibrillation, which is in effect, an oscillation of the heart caused by LOW VOLTAGES, and if that happens, unless medical assistance is at your side, means CERTAIN DEATH.

Read, take precautions, and finally think before you plunge your hand into the transmitter.

With alternating current there is little if any significant difference in the reactions of the body to shocks from 25 and 60 cycle circuits. Dalziel has found that the response of the human body is practically uniform for frequencies ranging from 10 to 300 cycles per second. At 1,000 cycles, a somewhat greater voltage current is required to produce a given reaction while very high frequencies, such as are used in diathermy, have only a heating effect.

The effects produced by interrupted direct currents vary not only with the period of the interruption, but also with the cycle followed. An exponentially rising unidirectional current is the most efficient for the stimulation of nerves. As such wave forms are difficult to generate, square or rectangular waves usually are employed. Square waves are almost as effective as the exponential type, and they are generated and controlled more easily.

Voltage. People recognize that high voltages are dangerous. However, they should be equally careful of low voltages. There are a number of cases on record where contact with 60 and 65 volt circuits of commercial frequencies have resulted in fatal accidents. The lowest voltage fatality of which the author has any record occurred at 46 volts, 60 cycles. It is probable that circuits of 24 volts or less may be considered as safe under practically all conditions.

Resistance of the Body. The resistance of the body consists of two parts, that offered by the skin at the points of contact, and the internal resistance. The skin consists of two principal layers. The outer skin or epidermis is from 0.05 to 0.2 millimeter thick. It is non-vascular and on the palms and bottoms of the feet horny and calloused. The inner skin, or derma, is from 0.5 to 1.7 millimeters thick and contains blood vessels and nerves. Dry epidermis has a high resistance which may reach 100,000 ohms per square centimeter. The resistance offered by the inner skin is low, as body fluids and blood are good conductors because of their salinity. In fact, the only poor conductors inside the

body are the bones. The internal resistance of the body is therefore relatively small.

The equivalent electric circuit of the body consists of three parts. Where the current enters, the epidermis acts as capacitor with a poor dielectric. The tissues of the body act as pure resistances and provide a homogenous path for the passage of an electric current. At the point where the current leaves, we again have a capacitor with a poor dielectric. This may be demonstrated by taking an oscillogram of the current when a continuous potential of 50 volts is applied to electrodes held in the hands. At five microsecond after closure of the circuit a current of 19 microamperes was recorded. At 500 microsecond the current had fallen to three microamperes. At 10,000 cycles the power factor of the body of a normal healthy person is about 0.1.

The resistance of the skin is not constant. It varies with the amount of moisture that it contains, the temperature, and the applied voltage. Under thoroughly wet conditions, the resistance of the epidermis may fall to as low as 1/100 of its dry value. If contact with a circuit continues for any length of time, the skin loses its protection because of the formation of blisters. At 50 volts blisters form in six or seven seconds. The relationship between a 60-cycle voltage and the resistance offered to the flow of current is illustrated in the following table.

Alternating Voltage	Average Resistance (Ohms)	Range Resistance (Ohms)
50	10,000	5,000-18,000
500	1,200	800-1,800
1,000	1,100	800-1,800

These readings were taken three seconds after the circuit was closed, and were made on cadavers. The circuit through the body was from hand to hand. When the epidermis was removed, the resistance was found to be practically independent of the voltage. In general, the skin of the female is of lower resistance than that of the male. This is true for skin taken from such areas as the abdomen and back where callousness is not present. An individual's skin resistance also increases considerably (about double) when asleep.

Current. The value of the alternating current that flows through the body when contact is made with an electric circuit is of extreme importance as it determines the resulting injury. Current values that are of interest are—

1. Threshold of feeling.
2. Let-go current.
3. The freezing current.
4. The current which an individual can withstand without being rendered unconscious.
5. The current that will produce ventricular fibrillation.
6. The current which will produce a block in the nervous system.
7. The counter shock current.

The current that will just produce a tingling sensation which can be detected at the point of contact, is of the order

* Dean of Engineering and Professor of Electrical Engineering, The Johns Hopkins University, Baltimore, Md.

of one or two milliamperes. Some individuals, particularly women, are extremely sensitive to small currents. Other individuals are not so sensitive. The sensitivity of an individual to detect a small current also varies with his physical state.

It is well known that contact with an electric circuit produces a contraction of the muscles. This contraction may be so severe as to prevent the victim from freeing himself from the circuit. The let-go current is that value of current which an individual can withstand without harmful effects for at least the time required for him to release his hold on the circuit. Professor Dalziel has made an exhaustive study on a representative group of men and women and reports that for men the standard frequency let-go current is nine milliamperes and for women, six. This is the current value that 99.5 per cent of the individuals tested could release voluntarily. The value of the let-go current varies with the individual and Dalziel found that for men it ranged from 8 to 22 milliamperes.

The current that will hold an individual frozen to a circuit is naturally in excess of his let-go value. Because of the heating produced by the current where it passes through the epidermis and the short time required for the skin to blister and lose its protective resistance, this freezing current should be avoided at all costs. Unless there is someone present to break the circuit, the result may be fatal.

There is no information available as to the current that an individual can tolerate without losing consciousness. The lowest value of current that will produce unconsciousness is somewhere between the let-go current and that required to produce fibrillation.

A current of 100 milliamperes flowing from the hands to the feet is sufficient to throw the ventricles of the heart into fibrillation. This value of current is not large enough to hold the heart in diastole; instead it disturbs the rhythm and co-ordination of that organ. Each individual heart muscle functions without regard to the others, and the action of a heart in fibrillation looks like the ripples that flow across a puddle when a pebble is dropped into it. In this condition the circulation of the blood ceases, because the heart no longer acts as an effective pump.

The current that will produce a block or partial paralysis in the nervous system is of the order of several amperes. The nerve block prevents the signal from the brain reaching the lungs and natural breathing ceases. Artificial respiration should be applied promptly in such cases.

The counter shock current is that current which will bring the ventricles of a fibrillating heart to rest. A 60-cycle counter shock current of between one and two amperes applied directly to the heart will arrest fibrillation. When this current is broken sharply the heart usually will resume its normal co-ordinated beating. There is no information available as to the most advantageous location of the electrodes nor as to the current value required when the electrodes are applied externally to the body.

Pathway Through the Body. The pathway that the current traverses in

its passage through the body is of extreme importance. In general, if there are no vital organs, such as the brain, the heart, or the lungs, in the current path, the resulting injury is a minimum one (burns excepted). For example, in some experiments on rats in which the animals were given a two-second shock at 220 volts, 60 cycles, all those where the current path was from foreleg to foreleg died; while those where the path was from hindleg to hindleg survived.

In most industrial accidents the current path is from the hands to the feet. This path involves the heart and the lungs and is, therefore, particularly dangerous. When contact is made at two points on the same arm or leg, no current passes through the trunk. In fact, when current enters the body via one leg and passes out through the other, no vital organs lie in its circuit.

Once the current enters the body trunk, it follows a more or less fusiform pattern. When through-type current transformers were inserted in the body, it was found that approximately 90 per cent of the total current passed through the heart when the current pathway was from one hand to the feet.

Duration of the Contact. The duration of the contact should be as short as possible, and the higher the voltage, the shorter should be the time of contact, if there is to be any hope of recovery. In fact, duration of the contact should be as brief as the janitor's Christmas.

EFFECTS

The passage of an electric current through the body produces numerous effects that differ not only in intensity, but also in kind. They range all the way from a slight tingling sensation to death. The consequences depend upon the value, frequency, and pathway of the current and on the duration of the shock. The aftermath may be good or evil. An electric shock may produce healing in certain mental diseases or it may produce a state of depression of the vital processes of the body characterised by rapid but weak pulse, rapid but shallow breathing, pallor, restlessness, and a depressed mental state similar to surgical shock or a highly excited, almost maniacal state. Some of the effects produced by an electric current are discussed in the following.

Conscious Phenomena. If the victim of an electric shock retains consciousness and is conscious following the contact, there is often a whistling or ringing in the ears and partial deafness for a time. In addition, there may be visual disorders such as flashes and brilliant luminous spots. Pain and soreness of the muscles are a common reaction. If the shock is a severe one, the victim usually will be restless and irritable. These disorders generally disappear in a few hours.

Muscular contractions are produced when contact is made with an electric circuit. These contractions are particularly marked when the circuit is an alternating one of commercial frequencies. At high voltage the tetanus of the muscles is very sudden and severe. It may throw the victim clear of the circuit. In some instances bones have been broken. The severity of the contraction probably accounts for the soreness that is felt in the muscles. Clonic contrac-

tions of the extremities often are observed following a shock and tremors may continue for some minutes.

Convulsions may occur in cases of electric shock. They usually are characterised by irregular muscular spasms and tremors.

Loss of consciousness occurs in many electrical accidents. Sometimes the victim recovers spontaneously; in other cases, either after the application of artificial respiration, or never. Cases also have been reported where the victims lost consciousness when contact with the circuit was made at two points on the same leg or hand, and in which there was no burning of the tissues. Such cases are believed to be due to a severe shock to the system.

Electric burns are of two types, those produced by the heat of the arc, as may result when contact is made with a high-voltage circuit, and those that are caused by the passage of the electric current through the skin and the tissues. Burns resulting from an electric arc are, in general, similar to those produced by high-intensity heat sources. The electric burn often is characterised by a pinkish mark on the surface of the skin. The burns, however, may penetrate deeply and require considerable time to heal. Jellinek reports a case where the current value was large enough actually to char the flesh at the elbow where there exists only a relatively small amount of body tissue. Burns, blisters, and markings are not necessarily present on the skin after an electric accident. When the skin is saturated thoroughly with water and the contact area is not covered, the electric shock may not leave the slightest detectable blemish. Burns produced by electricity usually heal without infection. They, however, heal slowly. In severe cases, fingers or limbs may be lost and death may follow as a secondary effect.

The Nervous System may be so profoundly shocked or fatigued by a contact with an electric circuit that it cannot function normally again for a period of minutes or hours. The nerve cells are injured, especially in areas that have been traversed by the current. Injured cells are characterised by a dark shrunken nucleus, which is often eccentric in position, and the loss of granules. The damage, however, is patchy in distribution so that injured and normal healthy cells lie in close proximity. Autopsy of shock victims also has revealed cavities in the nervous system of 25 to 200 microns in diameter. These may be caused either by heat or electrolysis.

One of the most common effects on the nervous system is the production of a temporary paralysis or block. The location of this block will depend upon the path taken by the current. The lungs or other portions of the body may be paralysed following the shock. There is a case on record where a woman stood with her back resting against the edge of an electric range when the power line was struck by lightning. She received a severe shock which was followed by a temporary paralysis and loss of sensation in both limbs that lasted for about four hours. The many successful resuscitations resulting from

(Continued on Page 5)

Economical Design for a Simple Standby

BY E. A. CHARLES,* VK5YQ

The need for an auxiliary transmitter often arises. Quite frequently you would try out that new idea if you didn't have to QRT to do it. Less frequently something goes haywire and you are QRT until you make the necessary repairs or alterations.

At present most transmitters have become a semi-permanent fixture on twenty metres. When that band is dead (and that's often during present sunspot activity) you end up tuning the other bands and often hear an old friend calling CQ. By the time you have decided to change up (or down) and returned, he is probably in a "black-out" area, and then you find that DX has broken through on twenty!

There are usually two or three times a year you would operate mobile IF you had the gear made up. And those cross-town chats, the promises to join the v.h.f. gang, and the next R.D. Contest! Why not combine the bare essentials to cater for all contingencies in a "Jubilee Austerity Auxiliary?" Here is one way to do it with about ten watts input for phone and up to twenty watts on c.w.

Firstly, here is a brief summary of the ideas from which it was made up.

"Economy" refers to cost and space, i.e.,

- (1) Using a minimum of components commensurate with desired versatility and general usefulness;
- (2) Using standard receiver, disposals or junk-box parts where possible;
- (3) Making use of the main station's spares and accessories;
- (4) Getting the maximum from a minimum current drain.

"Simple" implies only the essential controls, and absence of critical adjustments (no neutralisation; no efficiency modulation).

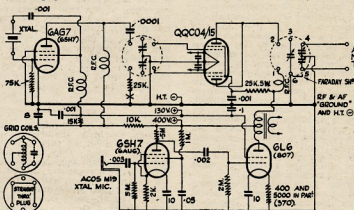
"Stand-By" means a phone-c.w. transmitter for home or outside operation on all popular bands, that is capable of easy conversion to a simple transceiver for emergency operation.

* 193 Young Street, North Unley, S.A.

THE POWER SUPPLY

Always remembering that any transmitter is only as good as its aerial system, the mobile one has another limitation—the life and strength of its power supply.

There is a variety of disposals vibrapacks and genemotors available, and, if you have something on hand, the transmitter can be designed to get the full benefit from its voltage and current output. If you are going to make something up, then it is desirable that it can be used to run other equipment when not required on this stand-by transmitter. With the power pack described, switched to choke-input filter, it can be used for a receiver, frequency meter, test equipment, etc.



The only suitable available rectifier for a dual supply is the 6X5. Its ratings per A.R.R.L. Handbook are: 350 volts per plate, 4 uF. condenser input filter, 75 Ma. output. It is possible to draw up to 100 Ma., but it is considered neither desirable nor necessary with the circuit used. A special transformer can easily be made from a "salvaged" b.c.l. tranny. It would be expensive, if bought. The addition of low tension windings is easy and, you could make provision for using a second 6X5 if the transformer is large enough to supply the extra milliamperes. However, a common commercial type suitable is the 385 aside with two or three heater windings. The addition of another five-volt winding will be OK for the vibrator circuit if the transformer has only two low tension windings.

Current limiting resistors in each plate lead and a reduction of the filter input capacity will drop the output to 400 volts under load, and qualify the 6X5 for the

"Old Age Pension." (See the A.R.R.L. Handbook chapter on Power Supplies.)

This circuit is taken as the basis for the line-up of the transmitter which, as a result, is limited to an input of 400 volts at 75 milliamperes.

THE MODULATOR

This was quite a long search—the economies of Class B operation were not! It is of little use having ten watts of audio if you have not sufficient milliamperes left to produce five watts of r.f.!

Delving into pre-war valve characteristic pamphlets produced a set of figures for the 6L6 (807) that had to be the answer. With 375 volts on the plate, 125 volts on the screen, a class A 6L6

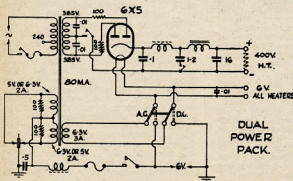
gives four watts output into a 14,000 ohm load for a total maximum current drain of 26.8 Ma. The plate current is 24.3 to 25 Ma., the screen current 0.7 to 1.8 Ma., and the cathode resistor 365 ohms.

From theory, 50% audio power is required for 100% sine wave modulation; for speech, 30% to 40% is considered quite sufficient. The p.a. plate (and screen) input can thus be around 13 watts. The push-pull (10w.) audio output tranny as a 1 to 1 modulation transformer reflecting the p.a. load as the 6L6's plate load impedance results in only slight impedance mismatch and d.c. unbalance.

Because this is low power, it is no reason for poor quality. The big rig's xtal microphone can be utilised by having a single 6SH7 (6AU6 in miniature) speech amplifier stage driving the 6L6.

The Acos M19 does require close speaking for maximum output, but it is preferred to the use of a carbon mike which requires either a transformer (space) or a tube drawing much more current than the 6AU6 (less than 1 Ma.). The 6AU6 (6SH7) has more gain than a 6J7.

Of the 75 available milliamperes, a steady 25 have now gone to the audio section.



THE R.F. SECTION

Whereas other circuits may be considered more suitable in some applications, this was chosen as the best all-round answer. Circuit switching is by means of the plug-in coils.

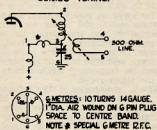
The 6AG7 harmonic oscillator saves a tuned stage and triples better than the tri-tet. It produces the full maximum drive for the final from 10 Ma. plate and 6 Ma. screen currents. Other popular well-screened pentodes as the EF50, 6AC7 or 6SH7 will produce sufficient drive for satisfactory low power operation.

Witness VK5KL's results with 6 watts on 6 metres ("A.R." July, 1951). The available milliamperes for the p.a. are now 34.

The QQCO4/15 was my choice on account of its socket connections and high efficiency. An 832 would no doubt perform as well, but it requires almost twice the screen current. Note that the Philips' tube is directly heated and needs a separate circuit ground other than the chassis if it is to be used for both a.c. and d.c. operation in a car. The parallel or push-pull doubler p.a. runs at approximately 24 Ma. plate and 8-10 Ma. screen current, representing 9.6 watts final plate input with plate and screen modulation.

A choke-input filter and a bleeder resistance would help on c.w. A special section-wound final r.f.c. is preferable to the usual 2.5 mH.

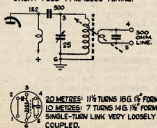
PA PLATE TUNING & ANT. COUPLING. SERIES TUNING.



OPERATION

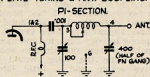
On the 144 Mc. band the QQCO4/15 is used as a plate modulated oscillator. Whereas a plug-in/clip-on tank could be used, a separately wired socket with v.h.f. heater chokes is a simpler alternative, depending on your mechanical ingenuity. For six metres, we triple and double an 8 Mc. xtal with the final series tuned.

PA PLATE TUNING & ANT. COUPLING. SHUNT FEED PARALLEL TUNING.



Ten and Twenty Metres: Parallel tuning is used with a 1 turn Faraday shield pick-up link loosely coupled for 300 ohm line output. On 20 metres, a 0.0003 uF. fixed condenser is wired across the link to be in parallel with the F.N. two-gang to make up the required capacity.

PA PLATE TUNING & ANT. COUPLING.



Forty and eighty metre operation is with a long wire (random length—i.e. 5/8K type) antenna. The final tank and output is switched to become a Collins Tuner when plugging in the appropriate coil. Multiple taps enable it to be used on 40 and 80 with any length of wire. The final has both sections operating in parallel (by means of the straight-through grid plug) when operating at crystal frequency.

A final tank condenser of 25 pF. gives the correct L/C ratio for a Q of 12 with the high impedance of the final, up to 40 metres, allowing for valve electrode and stray circuit capacities. A 0.0001 uF. condenser is required if operating up to 80 metres.

Keying and metering can be of your own choice. The addition of a (super) regenerative detector feeding into the audio section could turn the stand-by into a transceiver (with suitable switching and using the modulation transformer's voice coil output). Switching the high tension to the home station receiver would also permit emergency battery operation.

It is better to plan your layout many times and only build it once.

EFFECTS OF ELECTRICITY ON THE HUMAN BODY

(Continued from Page 3)

the prompt application of artificial respiration to shock victims may be ascribed to the temporary nature of this paralysis. If nature is given the opportunity, it often will repair the damage and again permit the signal from the brain to reach the organ in question.

Ventricular Fibrillation results when a small current passes through the heart and disturbs its normal co-ordinated rhythm, as explained in the foregoing. The human heart does not recover spontaneously from ventricular fibrillation. While the heart is in this condition there is no circulation, and death will ensue.

Ventricular fibrillation may be arrested by the passage of a 60-cycle current of the order of one to two amperes through the heart. This value of current is sufficient to bring the muscles of the heart to rest and hold that organ in diastole. Then when the circuit is broken the heart usually will resume its normal operating rhythm. The feasibility of this method of recovering the heart by an electric counter shock was demonstrated by using experimental animals. It has been applied to man and two cases of successful recovery of the fibrillating heart are reported.

Permanent Effects. Permanent injuries from contact with electric circuits fortunately are extremely rare. Perwitzschky reports 23 cases of auditory and vestibular injuries that appeared either immediately or from one or two years after the shock. It is peculiar that the damage was not related in any way either to the severity of the shock or to the path of the current through the body. There are cases on record where the ear formed one of the circuit contacts yet no permanent after-effects resulted.

Death from electric shock may result from a number of causes or from a combination of two or more of them. In general, low voltages kill through the mechanism of ventricular fibrillation and high voltages either through the destruction or inhibition of the nerve centres; asphyxia being the immediate cause of death.

A YOUNG MAN'S GAME?

So radio is a young man's game? Don't you believe it! As a profession, maybe. But as a hobby—well, you're never too young or too old.

Take "Skipper" Schofield, VK6WS for example. VK6WS makes no claim to be the "oldest" Ham in VK6 from the point of greatest number of years spent pursuing the hobby, but he does claim to be the oldest in the true sense. Not many men approaching sixty set to and study for their A.O.P.C., but "Skipper" did—and got his ticket in the early 1930's. Now, at 78, VK6WS is still active, mostly on 7 Mc. these days, but hoping for a return of good conditions to twenty metres, his favourite pre-war stamping ground.

Forty metre activity results from a Type 3 Mk. II., but the main rig is v.f.o. controlled, finishing with a T50

in the final. Operation can be had on 80, 40, 20 and 10. There's a "Commander" communications receiver to bring the signals in and a dual 20 and 10 metre beam, power-driven, to push "Skipper's" signal out. The original rack-and-panel frame, which VK6WS built, is still in use although, as "Skipper" himself says, "the innards have been altered many times from the old tri-tet and a P.M.G. type carbon mike."

A qualified accountant and a Justice of the Peace, "Skipper" is now living in retirement after thirty years in business as a hotel and business broker. His chief interests aside from Ham Radio are gardening, photography—and cigars! A question he'd very much like answered is "has any other Division a member with as many (or more) milestones to his credit?" Any takers?—VK6WZ.

Radio Control of Model Aircraft

BY C. H. CASTLE,* VK5KL

At first sight the control of Models is not Ham Radio as we know it, but a hobby that the Amateur is closely allied to because of the transmitting and receiving equipment used and the knowledge that the Amateur can give to overcoming the many difficulties that can arise in the operation of the radio gear. Much credit can be given to our fellow Australian, the late Ross Hull, who, whilst on the staff of "QST" over a period of years, made a close study of radio controlled Models and his development of a simple actuator and escapement is still used today in simple types of control and is most reliable.

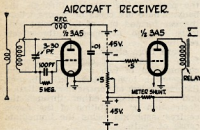
Purpose of Control started with the introduction of Petrol engine powered Models because of their range and necessity to bring the Model back instead of having to chase it for miles.

Weight.—Apart from special designing of the Model, it is necessary to carefully consider the weight that has to be carried (batteries, receiver, relays, etc.) and the distribution of the weight so as not to upset the equilibrium and centre of gravity for stable flying.

Number of Controls in Order of Preference:—

- (1) Rudder—right or left.
- (2) Elevators—up or down.
- (3) Motor speed.
- (4) Shut off motor.

The simplest is rudder control only and is best to start on before graduating to the more complex systems.



Action of Receiver on reception of signal is to energise a sensitive relay which in turn closes the battery circuit to operate a second relay that is part of the actuator and escapement that operates the rudder. Early receivers used type 30 and 1F4 tubes, and mainly used about three valves to get enough change in plate current to operate the relay. In 1938 a gas triode (RK62) was made and its present day equivalent is the XF1G. With the introduction of high ohmage sensitive relays, the receiver was reduced to one tube. Other hard valves such as the 3V4 and 3A5 are all used successfully.

Circuit used is the super-regenerative detector because of its sensitivity. In practice the combination of plate volts grid condenser and resistor, plus aerial loading, are used to adjust the plate current of the tube until it will hold in the tongue of the relay. On receiving a signal, the plate current will drop and

thus release the relay tongue and so close contacts that will operate the escapement relay. The gas triode tubes give the best variation in plate current from 1.5 to 0.5 Ma. and the hard tubes from say 5 down to 3.5 Ma. according to signal strength. It was found that all these adjustments were very finicky and prone to body capacity and unstable in operation from one time to another; at one time the relay would have positive action and a little later it would be unreliable.

A friend had asked the writer to assist with the building of a radio controlled Model, supplying the necessary radio knowledge. After investigating several others' gear and reading as much as can be found on the subject, a receiver was made up and experiments started with the results that after a few months had passed we still did not have a satisfactory receiver due to the faults mentioned beforehand.

The main trouble seemed to be that one could not get an adjustment whereby the receiver was stable enough for operation for hours on end, nor was it stable enough in plate current variation to work the relay positively. In field tests sensitivity dropped away fairly quickly after the first few hundred yards.

It was decided to postpone launching the aircraft until such times as a better receiver was devised and to this end a few months was spent on research, testing all the tubes and circuits that has been used successfully and some that had not. The relay being used was the squelch relay from a 522 and although it will operate on 0.5 Ma. change in plate current, it seemed to hold in best when a static plate current of about 3 Ma. was used. At that current the XF1G was out and a hard tube used.

What was wanted was one tube as the super-regen. receiver and a second biased to cut-off until on reception of a signal, then to draw enough current to operate the relay with positive action. After a further few months of trying all sorts of schemes, the receiver to be described was eventually sorted out and proved most satisfactory, both in field tests and in actual flying. It is very sensitive and positive even after six flights and landings without retuning and works even after weeks of inactivity.

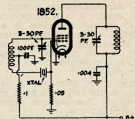
RECEIVER CIRCUIT

Looking at the circuit it will be seen that a 3A5 twin triode tube is used, one half being the normal super-regen. receiver and the second half the biased section to work the relay. The split h.t. battery is a bit unorthodox. Plate current drawn by the super-regen. section through the potentiometer in the centre of the battery produces a negative voltage across the resistor and so biases the second half of the 3A5 to cut-off. (This can be adjusted by the potentiometer to suit the amount of voltage that is applied to the plate of the relay tube.)

On receipt of a signal the plate current of the super-regen. receiver drops

and although it is minutely, the voltage variation across the potentiometer is great enough to overcome the negative bias on the second half of the 3A5 and becomes a positive voltage. The tube immediately conducts and draws plate current, limited by the amount of positive voltage applied to the plate. This current passing through the relay actuates the tongue of the relay and closes the contacts. On no signal, it releases and the tube returns to rest biased and drawing no current. This is also a saving on the batteries.

The resistor in series with the grid of the relay tube limits the current drawn by the grid of the tube if at any time the receiver section should fail to draw current and so sustain the bias on the second half. The receiving section, now not having to also draw enough current to operate the relay, does not have to be loaded up and so consequently as a super-regen. receiver, is much more sensitive.



In practice, on the frequency band 40.66 to 40.7 Mc., the Aircraft is taken as far away as possible from the transmitting point and tuned up with no antenna on the transmitter by use of earphones connected via a fixed condenser from earth to the plate of the receiver, and with transmitter key down, tuned on frequency for minimum hiss of the super-regen.

The potentiometer is then adjusted by the aid of clipping in a meter in the plate circuit of the relay tube and adjusting for nil plate current. (In practice it is found best to adjust at an idling current of about 0.25 Ma.) On key down of the transmitter, the current will rise to around 3 Ma. and operate the relay.

When the antenna is put on the transmitter, it extends the range and no trouble has been found of controlling the Model up to two and three miles on the ground. The receiver antenna is a quarter-wave centre fed fixed along the trailing edge of the wing.

LOCATION OF COMPONENTS

Batteries in the aircraft are installed immediately behind the engine only in the fuselage section and are of the small type used in portable receivers. The lighter type as used in hearing aids are not recommended as the saving in weight against useful life is not warranted. A small four-pin plug is used for connection as this simplifies matters when renewal is necessary.

Next down the fuselage is mounted the receiver. Contrary to some, this is mounted firmly to the body and not suspended with rubber as it is found better to take any shocks of crashes.

Near the tail is the escapement and relay and also a flat 4½ volt battery for

* 29 Turnbull Road, Enfield, South Aus.

operating the relay and the rubber motor that is associated with the escapement. The escapement is of the simple sequence type and operates neutral left, neutral right, neutral. There is no need to describe this as anyone interested will have the necessary knowledge or can obtain same from certain publications dealing with them.

TRANSMITTER

Of the two frequencies allotted for radio control of Models in Australia, namely, 26.957 to 27.282 Mc. and 40.66 to 40.7 Mc., the higher frequency was chosen as there it was more practical to use a half-wave antenna on the transmitter and also the wing span of the Aircraft would allow a quarter-wave aerial to be used.

The failure of some types of gear seen, seemed to be in the stability of the transmitters and so from the first, crystal controlled was aimed at and overcome in one tube by the use of the harmonic oscillator circuit. The crystal frequency is 6780 Kc. and the output frequency 40.68 Mc. A lot of the success of control is attributed to having stability in the transmitter.

ANTENNA

Used in all tests is a simple folded dipole made of 300 ohm ribbon, the flat top being 11 ft. 6 in. long.

ANTENNA.



FOLDED DIPOLE
MADE OF 300 OHM RIBBON

some of the very ob-
stacles that may be
marring their attempts to achieve suc-
cessful control of their particular Model,
be it Aircraft or Ship.

All enquiries will be answered by the author and help given where possible.

MORSE CODE

Many thousands of W/T Operators throughout the world have successfully mastered Morse the Candler way.

SPECIAL COURSE for those who wish to reach essential speed to pass the test for an Amateur Transmitting Licence.

JUNIOR COURSE—A complete course for the Beginner. Average students reach speeds of 20 w.p.m.

ADVANCED COURSE—Recommended for those who can already send and receive at not less than 15 w.p.m. Average students reach speeds of 25-30 w.p.m.

TOUCH-TYPEWRITING—A course specially prepared for W/T Operators.
Send for a copy of the CANDLEE'S "BOOK OF FACTS"; it gives full details of all the above training.

THE CANDLER SYSTEM CO.

(Dept. A.M.I.)

52B ABINGDON RD., LONDON, W8, Eng.

The Candler System Co., Denver, Colorado, U.S.A.

RADIOTRON 6BV7

Double Diode Power Output Pentode—

The new Radiotron novel 6BV7 miniature valve has been designed by the engineers of Amalgamated Wireless Valve Company especially to meet the needs of manufacturers of compact, low-cost receivers with high performance. This new valve is mounted on the standard nine-pin miniature base and contains in one envelope, two diodes and a high-slope power output pentode with a common cathode.

With a seated height of 2½ inches and a maximum diameter of 1 inch, the 6BV7 makes possible the design of ultra-small superheterodyne receivers using only three valves: 6AE8 (or the 6BE6), 6BV7, 6X4.

The pentode section mutual conductance of 10,000 micromhos allows the receiver engineer to employ audio tone correction circuits without seriously affecting the overall sensitivity.

The 6BV7 is capable of a 2 watt output under low plate voltage conditions, thus enabling power supply economies to be made.

List price of the Radiotron 6BV7 will be 19/6.

GENERAL DATA

Electrical:	
Heater, for unipotential Cathode:	0.6V
Voltage (a.c. or d.c.)	8.3 volts
Current	0.15 ma.
Direct Inter-electrode Capacitances (with no external shield):	
Pentode Input: Grid to Plate	0.5 pF. max.
Input	11.5 pF. max.
Output	9.5 pF. max.
Diode (pin 1)—Diode (pin 6)	0.6 pF. max.
Diode (pin 1)—Pentode Plate	0.7 pF. max.
Diode (pin 6)—Pentode Plate	0.3 pF. max.
Diode (pin 1)—Pentode Grid	0.1 pF. max.
Diode (pin 6)—Pentode Grid	0.1 pF. max.
Mechanical:	
Mounting Position	Any
Maximum Overall Length	2-3/8"
Maximum Seated Length	2-3/8"
Length, Base Seat to Bulb Top (excluding tip)	2" plus or minus 3/32"
Maximum Diameter	1-1/8"
Bulb	T-6 1/2"
Base	Small Button Novel 9-Pin
Base connections for bottom view—	
Pin 1—Diode Plate	
Pin 2—Pentode Plate	
Pin 3—Pentode Grid No. 2	
Pin 4—Heater	
Pin 5—Heater	
Pin 6—Diode Plate	
Pin 7—Cathode and Pentode Grid No. 3	
Pin 8—Pentode Grid No. 1	
Pin 9—Cathode and Pentode Grid No. 3	

PENTODE UNIT

A.F. Power Amplifier—Class A

Maximum Ratings, Design-Centre Values:	
Plate Voltage	250 max. volts
Grid No. 2 Voltage	250 max. volts
Plate Dissipation	10 max. watts
Grid No. 2 Dissipation	2 max. watts
Peak Heater-Cathode Voltage:	
Heater negative with respect to cathode	90 max. volts
Heater positive with respect to cathode	90 max. volts
Typical Operation and Characteristics:	
Plate Voltage	150 volts
Grid No. 2 (Screen) Voltage	180 250 volts
Grid No. 1 (Control) Grid	—4 —5 volts
Peak A.F. Grid No. 1 Volt.	4 5 volts
Zero-Sig. Plate Current	20 38 Ma.
Zero-Sig. Grid No. 2 Cur.	35 6.0 Ma.
Plate Resistance (approx.)	13000 10000 ohms
Transconductance	8000 10000 umhos
Load Resistance	5000 7000 ohms
Max. Sig. Total Harmonic Distortion	10 10 %
Max. Sig. Power Output	2 4 watts

Maximum Circuit Values:
(for maximum rated conditions)
Grid No. 1 Circuit Resistance:
For grid bias 0.1 megohm
For cathode bias 0.5 megohm
For back bias see under Application

DIODE UNITS

Maximum Ratings, Design-Centre Values:
Plate Current (for each diode) 1.0 max. Ma.

Diode Considerations:

The two diode units are placed on opposite sides of, and parallel to the cathode, the sleeve of which is common also to the pentode unit.

The minimum diode current per valve with an applied d.c. voltage of 10 volts is 0.5 Ma.

APPLICATION

The Radiotron type 6BV7 is a nine-pin miniature duo-diode output pentode with a transconductance of 15,000 micromhos and a power output of 4 watts for 10% total harmonic distortion under recommended 250 volt operating conditions. The valve was designed primarily for use in low cost four valve receivers in which good performance is required with reduced plate and screen voltages and low cathode current. In this application with plate, screen and control grid voltages of 180, 180 and -4 volts respectively, Radiotron 6BV7 will deliver 2 watts output for 10% distortion with a plate current of only 30 Ma.

Diodes

The location of the diodes in the output valve allows a very convenient layout for the conventional 4 valve straight or rexy receiver and enables higher i.f. gain to be obtained without excessive regeneration, or without neutralising, than is possible when the diodes are located in the r.f. amplifier valve.

In receivers with an a.f. amplifier between the detector diode and the grid of the pentode section, it is recommended that the diode connected to pin 6 be used for detection as this diode has the lower capacitance to pentode plate. In other types of receivers either diode may be used for detection.

Pentode

Grid Resistor. The maximum permissible value of a resistor for Radiotron 6BV7 under maximum dissipation conditions is 0.5 megohm for cathode bias operation and 0.1 megohm for fixed bias operation. In conventional receiver applications in which the pentode is operated at maximum ratings, the grid resistor should be reduced from 0.5 megohm in the ratio that the cathode current of the beam resistor to the total current drawn by the receiver.

Larger values of grid leak may be used when the dissipation of the valve is reduced. For example, under the 180 volt conditions quoted above, a 100,000 ohm resistor in series with at least half of the total B supply current is drawn by the output valve, the maximum permissible value of grid resistor is 1 megohm.

Grid Stopper. The high transconductance of Radiotron 6BV7 provides good power sensitivity and under 250 volt operating conditions an input of 0.25 volt r.m.s. gives 50 mW. output. Under 180 volt conditions an input of only 7.5 volt r.m.s. gives full rated output. In addition to its usefulness from the point of view of pure sensitivity, the high transconductance of Radiotron 6BV7 makes possible the use of a large degree of negative feedback than would otherwise be possible. Even in the case of a four valve straight receiver, worthwhile degrees of negative feedback can be applied to the output stage while still maintaining good overall sensitivity.

Because of the high transconductance of Radiotron 6BV7 a grid stopper should always be used and a value of 5,000 ohms is recommended.

In four-valve straight receivers a large audio voltage appears on the diode and with the volume control turned to minimum the amount of playthrough is proportional to the impedance between control and diode. For this reason, the grid stopper should not be too large—5,000 ohms is as effective as 50,000 ohms. A large grid stopper will tend to load the grid coupling capacitor be too small. Under these conditions playthrough will be very low.

Use with Low-Level Pick-Ups. When Radiotron 6BV7 is used as part of a high-gain pick-up amplifier, such as is required with some low-level broadcast stations, it is desirable to arrange the radio-gramophone switching to remove the detection diode from the circuit in the high-gain pick-up position in order to remove the possibility of feedback through the diode circuit. As such switching is incorporated in most receivers to prevent interference between items from radio programmes, this arrangement does not normally involve additional cost.

Ventilation. The envelope of Radiotron 6BV7 becomes very hot in operation, and free circulation of air around the valve is necessary.

FEDERAL EXECUTIVE PROCEEDINGS

This is a new column to be featured monthly bringing to the country members and metropolitan members, who are unable to attend the regular monthly meeting of the Division, a brief summary of resolutions arising from meetings of the Federal Executive. By this means the more isolated members of the Institute will be kept in touch with what is going on.

The Federal Executive meets twice in each month—sometimes three times—to discuss and resolve the directives and problems of each Federal Council.

A copy of the minutes of all meetings is forwarded to each Division through the Federal Council, who is the liaison officer between his Divisional Council and the Federal Executive. Any member in a Division who desires more detailed information on any matter appearing in this column is at liberty to address the Council of his Division.

A member may desire to have a matter of a Federal nature discussed and resolved by Federal Executive. He does not write direct to the Executive! He writes to his Divisional Council first; the Council then decides if the matter is Federal, or whether it is domestic. If the matter is considered a domestic one action is taken by the Council; if the matter is on a Federal level it is forwarded by the Federal Council to the Federal Executive. The resolution of the matter by the Federal Council is detailed back to the Divisional Council who in turn advises the member. The machinery of the Federal organisation works smoothly. The members should use it to achieve their requirements.

Resume of Minutes of Meetings of the Federal Executive held during July, 1952

Ratification of Convention Minutes.—The Secretary reported that all Divisions had ratified the minutes of the 1952 Annual Federal Convention.

After discussion, it was agreed that the Secretary would implement action on all items as soon as possible.

Visit of President Elpidio Quirino, President of the Philippines.—It was

agreed that it would be an appropriate time to ask President Elpidio Quirino why the DU Amateurs had been forbidden to contact other than Amateurs of the U.S.A. since the Philippines gained its independence after World War II.

Office of Assistant Federal Secretary.—It was agreed to offer the position to John Rice-Oxley, VK3AKO, who had signified his willingness to undertake the duties involved.

Knowledge of Federal Affairs.—Discussion took place on the lack of knowledge of what was happening in Institute affairs at a Federal level—particularly on the part of country members who were unable to attend monthly meetings of the Division.

It was resolved that a resume of Federal Executive meetings should be included in the magazine under the heading, "Federal Executive Proceed-

ings," similar to the method adopted by contemporary overseas magazines.

144 Mc. Transmissions from VK4.—The Secretary submitted correspondence from the Queensland Division reference 144 Mc. transmission on the air between 7 p.m. and 7.30 p.m. every Sunday night. It was agreed to ask all Divisions to ask their v.h.f. members to listen out, and if heard, report direct to VK4.

Discussion with the Postmaster-General's Department.—After consideration of a report of discussions between members of the Federal Executive and Officers of the Wireless Branch of the P.M.G.'s. Department pursuant to directives from Federal Council arising from discussions on appropriate agenda items at the 1952 Convention, it was agreed that the Federal Executive should press for finality of the appropriate matters without delay.

AMATEUR COMMUNICATIONS THROUGHOUT JUNE-AUGUST N.S.W. FLOODS

During June many N.S.W. inland towns experienced their worst floods in history. Although Amateur Radio Stations during the emergency were not called upon to handle any great amount of traffic, stations were always available when called upon. They spent many hundreds of hours listening and operating and reflected upon the potential value of the service in emergency.

Many Amateurs in various areas assisted in the operation, 2WH, 2AMV, 2WT, 2ANF, 2ADT, 2AWY, 2SN, 2ALX, 2TC, 2JV, 2ACT, 2II and 2BQ all rendered assistance.

It was another credit mark recorded for Amateur Radio and all stations participating.

The authorities—Army and P.M.G.—gave Amateur Stations full support and prompt co-operation.

Late in July and early in August, N.S.W. Amateurs were again engaged in emergency working. At the end of July when the Macquarie River floods reached serious proportions at Bathurst, the 144 Mc. band was used for an emergency call to Sydney. At the time, the telephone link to Sydney was out and the Bathurst Police requested Trevor 2NS to contact Sydney. They required

an urgent message to be relayed calling for the immediate dispatch of Army "Ducks" to the area for rescue work. A number of people were isolated and lives were threatened.

A CQ Sydney Emergency, on 144 Mc. at 10 p.m., resulted in a reply from Charlie 2NP answering, who passed the message to the Sydney Police. The link was kept open until 1 a.m., when all traffic was cleared.

It was the first important work on the v.h.f.s. in emergency and the distance covered—100 miles—makes it even more interesting.

Further emergency work was performed on 6th and 7th August, when the Hunter Branch Net swung quickly into operation, after a cyclonic disturbance caused river levels on the Hunter and its tributaries to rise swiftly.

Stations active in the Net were: 2ANU, 2VU, 2JZ, 2DG, 2XQ, 2TY, 2AKP, 2ADT, and 2AHA.

During the last three years, the Hunter Branch Emergency Net has been active on many occasions during flooding of the Hunter. The Net, by their work, have clearly shown the value of Amateur Radio in such emergencies.



Valves, new, boxed, R.C.A. 834s, £1/8/- each.

Limited number of the following Taylor Tubes: TZ20s, £2/10/- each; TB35s, £6/10/- each.

TRANSMITTERS ALTERED FOR BUSH FIRE AND FISHING BOAT WORK.

CRYSTALS, as illustrated, 40 or 80 metres, AT or BT cut. Accuracy 0.02% of your specified frequency, £2/12/6 each.

20 metre Zero Drift, £5 each.

Large, unmounted, 40 or 80 metre, £2 each.

Special and Commercial Crystals—Prices on application.

Crystals re-ground, £1 each.

BRIGHT STAR CRYSTALS may be obtained from the following Interstate firms: Messrs. A. E. Harrold, 123 Charlotte St., Brisbane; A. G. Heeling Ltd., 151 Pirie St., Adelaide; Atkins (W.A.) Ltd., 894 Hay St., Perth; Lawrence & Hanson Electrical Pty. Ltd., 120 Collins St., Hobart; Collins Radio, 408 Lonsdale St., Melbourne; Prices Radio, 54 Angel Place, Sydney.

DC11 TYPE CRYSTAL HOLDERS WANTED. ANY QUANTITY.

Screw-type Neutralising Condensers (National type), suits all triode tubes, Polystyrene insulation, 19/6 ea.

BRIGHT STAR RADIO

1839 LOWER MALVERN ROAD, GLEN IRIS, VIC. Phone: BL 3510
Prompt delivery on all Country and Interstate Orders. Satisfaction Guaranteed.

AMATEUR CALL SIGNS

FOR MONTH OF MAY, 1952

ADDITIONS

- New South Wales**
 2EQ—W. J. Storer, 17 Brook St., Muswellbrook.
 2AKC—K. C. Cotton, Camden St., Balgownie.
 2APZ—Rev. R. L. Kerdell, St. Peter's Rectory, 11 Church St., Leeton.
 2AQK—D. Hodgins, Mobile aboard S.S. "Bel-tana"; Postal: "Selroydon," Ross St., Glenbrook.
 2ART—D. Hodgins, "Selroydon," Ross St., Glenbrook.
 2ATE—P. F. Christie, 1 Marcella St., Kingsgrove.
Victoria
 3AM—A. M. Forecast, Mountain Highway, The Basin.
 3KO—M. A. O'Keefe, 46 O'Keefe St., Preston.

Queensland

- 4MU—G. G. Matheson, Knight St., Red Hill, Kingaroy.

South Australia

- 5AV—A. E. V. Molnueux, 39 Coorara Ave., St. Paynesham.
 5OG—L. E. Lawton, 31 Fortisgreen Ave., Pennington.
 5SU—F. H. Gray, 52 Ormond Gr., Adelaide.
 5WT—J. W. Trevor, Portable in Central and Southern Districts of S.A.; Postal: M.P.O. Ave., Murray Bridge.

Tasmania

- 7DZ—D. H. Watkins, 27 Hope St., Newtown, Hobart.

ALTERATIONS

- New South Wales**
 2KW—59 Harris Street, Sackville South.
 2NB—206 "Cheverell," 2 Elizabeth Bay Road, Elizabeth Bay.
 2RY—104 St. Charles Street, Herne Bay.
 2WP—55 Lambton Road, Charlestown.
 2XK—288 President Avenue, Miranda.
 2AN—Flat 1, Howe Cres., Ainslie, Canberra.
 2APB—16 Harper Street, Merrylands.

Victoria

- 3BI—C/o. P.O. Learmonth.
 3JC—28 Potter Street, Dandenong.
 3JY—199 Sydney Road, Sandhurst.
 3PC—18 Cushing Avenue, Bentleigh.
 3QA—Fairbairns Parade, Glen Waverley.
 3QJ—415 St. Kilda Street, Elwood.
 3QJ—Morgan Street, Rosebush.
 3TY—9 Raglan Street, Sale.
 3VH—448 Glenhunting Road, South Caulfield.
 3YK—Malabar Road, Blackburn.
 3ZZ—Orchard Crescent, Box Hill North.
 3AAP—14 Carlyle Street, Maldstone.
 3ABO—Lot 7, Tay Street, Clayton.
 3AFH—6 Faurus Street, North Balwyn.
 3AGK—16 Barnard Grove, North Kew, E.S.
 3AJL—22 Royal Crescent, Camberwell, E.S.
 3AKC—Grant Street, Colac.
 3AMG—62 Orong Road, Armadale.
 3AMZ—52 Hoddle Street, Elsternwick.
 3ATN—Campbell Street, Birchlip.

Queensland

- 4GK—44 Henderson Street, Bulimba, Brisbane.
 4SG—74 Herries Street, Toowoomba.
 4WH—23 Mendum St., Mysterion Estate, Townsville.

South Australia

- 5GW—29 Grassmore Road, Prospect.
 5HE—National Bank, John Street, Salisbury.
 5LM—114 Anzac Highway, Helmsdale.
 5MS—Acacia Street, Mount Gambier.
 5SL—34 Albert Street, Semaphore.
 5TL—Rai Rai Avenue, Renmark.

Western Australia

- 6BR—11 Mark Street, Geraldton.
 6XE—Married Quarters R.A.A.F. Station, Pearce.
Tasmania
 7GR—73 Nelson Road, Sandy Bay, Hobart.
 7MG—Opasum Bay.
 7RB—Block 9, Prospect Street, Launceston.

DELETIONS

- N.S.W.: VKs 2F, 2AO, 2AOW.
 Vic.: VKs 3AC, 3UB.
 Qld.: VKs 4GE, 4W.
 W.A.: VKs 6KV, 6KZ.
 Tas.: VKs 1BS (now operating under VK3KQ).
 Ter.: VKs 1BS (now operating under VK3EG), 1DC.

FOR MONTH OF JUNE, 1952

ADDITIONS

- New South Wales**
 5EZ—P. T. Filmer, 84 Calverton Rd., Mornam.
 2ACW—L. R. Hawkins, 624 Olive St., Albany.
 2AGP—G. T. Ralph, 65 Kurraba Rd., Neutral Bay.
 2AKH—F. E. Knox (Lt/Cmdr.), 18 Brentwood Ave., Turramurra.
 2APN—D. G. Littlejohn, 14 Chamberlain Ave., Sydney.
 2AVK—S. F. G. Williams, "Elsinore," Edwin Ave., North Katoomba.

Victoria

- 3HQ—Mrs. M. L. Williamson, 17 McLean Ave., Bentleigh.
 3KD—R. S. Chambers, 326 Pascoe Vale Rd., North Essendon.
 3OR—R. W. Davey, Point Avenue, Beaumaris.
 3PS—D. A. Miller, 21 Sweeney St., Ballarat.
 3AAS—Army Apprentices' School Amateur Radio Club, Army Apprentices' School, Balaclava.
 3AHF—H. L. Fogg, C/o. Australia and New Zealand Bank Ltd., Benalla.
 3AJS—J. S. Duncan, 5 Glyndon Ave., Brighton.
 3AKQ—J. B. Ouley, 28 Victoria Ave., Canterbury, E.T.
 3ANO—R. A. Jones, 9 Norge St., Sunshine.
 3ANS—N. Sinnbeck, 122 Buckley St., Footscray.
 3APT—J. W. London, 89 High St., Glen Iris.
 3AVB—V. B. Aldrich, 22 Somerville Rd., Yarraville.

Queensland

- 4HJ—J. H. Chesterfield, Russell St., Cleveland.
 4OX—H. Cox, Flat 1, 11 King St., Nth. Mackay.

South Australia

- 5TA—R. W. Tate, 21 Bertie St., W. Hindmarsh.
 5TK—W. P. Kempter, Smithfield Hotel, Smithfield.
 5WZ—F. G. Anear, C/o. R.A.A.F. Station, Mallala.

Western Australia

- 6AU—L. A. E. G. Norman, 16 Agett Rd., Claremont; Postal: Box N1058, G.P.O., Perth.
 6FE—F. M. Eddy, C/o. Radio 6AM, Northam.

Tasmania

- 7DR—D. J. Robinson, Penguin Rd., Ulverstone.
 7RT—R. T. Calvert, 310 Park St., Hobart.
 7ZF—S. F. Medford, 4 Cooper St., South Burnie.

Territories

- 9DT—D. G. Taylor, Samarai, T.N.G.

ALTERATIONS

- New South Wales**
 2BG—343 Kissing Point Road, Duncraig, Sydney.
 2ED—25 Levedere Avenue, Punchbowl.
 2GO—32 Blake Street, Rose Bay.
 2JB—Reid Street, Seaford, Sydney.
 2LU—111 Hood Street, Yagoona.
 2VM—39 Weecoorra Avenue, Narrabehn North.
 2WZ—74 Landdowne Parade, Oatley.
 2YT—31 Avenue Street, Canby Vale.
 2ABM—Lot 15, Northcote Road, Bankstown.
 2ADO—83 Campbell Parade, Manly Vale.
 2AGS—Fishbourne Road, North Manly.
 2AHI—Albert Street, Casino.

Television Questions and Answers

Questions on television, submitted to VK3ADA, after being answered by post, will be anonymously published and again answered here, as space permits, to benefit other readers.

Q.—What is meant by "Spot-Wobble"?

A.—This is a system incorporated in some British 405-line receivers, to "make the scanning lines invisible." As the spot of light traces out each line on the screen, it is made to rapidly oscillate vertically, thereby broadening each line just sufficiently to fill the spaces between them so that the latter are no longer visible.

Although this system does not improve the definition, it has the psychological effect of making the picture appear clearer, through the absence of the familiar "pencil lines" across it.

Q.—I've read that if Australia copied the American system of 60 fields per second, instead of 50, we could have a brighter picture. Why so?

A.—Actually, by adjusting the brilliance and contrast controls, you can make the picture as bright as you please. Old Man—so long as you don't mind flicker! You see, it's been proved that the brighter the picture, the more noticeable becomes the flicker. For in-

Victoria

- 3JT—Eldorado Hotel, Leveon St., North Melbourne, N.I.
 3JZ—7 Chalm Street, Parkdale, S.11.
 3OY—85 Warrigal Rd., Oakleigh, S.E.12 (VK3OY recently changed from VK3HQ).
 3RX—22a Mercer Road, Armadale.
 3US—15 Hassett Street, Leongatha.
 3VL—15 Hassett Street, Leongatha.
 3ZJ—26a Queens Ave., Caulfield, S.E.9 (VK3ZJ recently changed from VK3AZJ).
 3ZM—126 Bellair Street, Kensington, W.1.
 3AEX—J. Fairway Avenue, Mount Beauty.
 3AHC—Nolan Street, Kilmore East.

Queensland

- 4JC—5 Stoneleigh Street, Toowoomba.

South Australia

- 5OP—18 Price Avenue, Lower Mitcham.
 5WJ—D.C.A. Parafield.

Western Australia

- 6AT—40 Broadway, Bassendean.
 6BF—93 Toorak Road, Rivervale.

Territories

- 9BI—Lae, T.N.G.

DELETIONS

- N.S.W.: VKs 2TI, 2AOL (now operating under VK3AJS), 2AHT, 2AOL (now operating under VK3API), 2AOP, 2AOK (now operating under VK4DX).

- Vic.: VKs 2NR, 3OH, 3RG, 3ZJ, 3AAC, 3AZJ (now operating under 3ZJ).
 Qld.: VKs 4HP, 4NF.

- S.A.: VKs 5HP (now operating under VK3AHP), 5GD (now operating under VK3OR), 5RO (now operating under VK3PO), 5BMC.

- Ter.: VKs 9FF (now operating under VK3SZ), 1WO.

CHANGE OF ADDRESS

W.I.A. members are requested to promptly notify any change of address to their Divisional Secretary, not direct to "Amateur Radio."

stance, in a modern cinema, the projector's shutter frequency (corresponding to our field frequency) is only 48 exposures per second, yet no flicker is apparent, simply because the picture on the screen is so dim, that it can only be seen in a dark theatre.

If the picture were made brilliant enough to be viewed in a brightly-lit living room, however, the flicker would become very noticeable and could be eliminated only by increasing the repetition, or "field" frequency to around the 60 mark, so your quotation would be quite correct, if the words "without flicker" were suffixed.

In television, however, if the field rate was increased from 50 to 60, the number of lines per picture would have to be reduced to keep the signal's bandwidth within its limits and the consequent sacrifice in picture detail is hardly justified.

A 50 field/sec. picture can be sufficiently reduced in brilliance to eliminate flicker, and still remain quite bright enough to be viewed under average domestic lighting conditions; screen phosphors have also been developed with sufficient persistence to eliminate flicker in an even brighter picture, without adversely affecting the latter.

In any case, the darker the viewing room, the better will be the picture, even with a 60 field/sec. system, because of the improved light/shade contrast. The reduced brilliance is probably better for the eyesight, too.

FIFTY MEGACYCLES AND ABOVE

Compiled by J. K. RIDGWAY, VK3CR.

NEW SOUTH WALES

The August meeting of the V.h.f. Section was held at Science House and took the form of a "gear" night. An excellent display of gear was shown with many excellently built crystal controlled converters, crystal control Tx's, and grid dip oscillators. It says much for the progressive attitude of those interested in v.h.f.

A Scramble was held on Sunday, 3rd August, on 6 metres which was a huge success with the boys in the North showing up to increase the total. The event was won jointly by 2ANF and 2VW with a total of 17 contacts out of a possible 22.

Main interest at the moment is the forthcoming 144 Mc. Field Day (week-end) during October when the Gladesville Radio Club and the W.I.A. are combining to make the event one of spectacular interest. It is proposed that camping groups will go out and man the major mountain tops some distance from Sydney and others will man the closed mountain tops within one day's travel to and from Sydney. It is hoped by this means to really establish some long distance contacts and also, if the VK3 Division co-operates, to work through to Victoria.

VICTORIA

The next V.h.f. Group meeting is on the 17th September, 8 p.m., at the

Rooms, 191 Queen Street. Visitors are welcome. Listen to 3WI for further announcements regarding meetings.

At the July meeting of the Victorian Division V.h.f. Group, Fred 3YS described his portable 6 and 2 mx Tx. This is xtal controlled with an 832 in the final, running 3 watts input and series modulated. The Tx was on view together with motor generator and three element beam.

Victorian v.h.f. enthusiasts have been preparing gear for their section of the W.I.A. stand at the forthcoming All Models Exhibition. A 50 and 144 Mc. station will be in operation to contact fixed and mobile stations, so if you hear them calling for contacts, please give them a call. Various other units of v.h.f. gear will be on display.

At the N.E. Zone Convention, held at Tatura on the 20th July, some neatly constructed v.h.f. gear was displayed by 3UI and 3APF. Of special interest were the xtal controlled converters which have been used so successfully. The N.E. Zone is to be congratulated on their early and consistent effort on v.h.f.

SOUTH AUSTRALIA

All bands still remain quiet although some have a little activity. 5ME has returned from a few weeks' duty at Renmark with 5BC and reports being able to hear Nhill Aeradio on 122 Mc. almost every day, a distance of approx. 160 miles. This even in winter, so

how about a little more activity chaps? It can be done if the will is there.

A recent "QST" gave a mention of the good work done by 5GL, 6BO, 5QR, on their 144 Mc. QSOs. 5AX's efforts have been rewarded and now has a very good signal in the city on 144 Mc. 5GY, in town recently, was given an eye opener of v.h.f. activity. Would be a sitter from his QTH. 5MK hopes to shift into his new home shortly and will be back on the v.h.f. bands soon after. How about the gardening Ron?

WESTERN AUSTRALIA

50 Mc.—6LU has appeared with both Rx and Tx. 6JU with a vertical dipole puts out a strong sig from a QQE06/40. John is making up a 6J6 pre-amp. on this band. 6IG on phone again—nice signal. 6DW and 6FE on this band also. 6HK has dropped his 834s until a new modulator is built. 6RK is back in his old shack and on the air again. 6GB not heard for some time. 6BO has nil to report except a new mast being built for the 7 Mc. antenna.

144 Mc.—Last month 6AG went portable and put out a marvellous signal from Greenmount. There have been quite a few in the QSOs of a Sunday evening, up to seven or eight—6JS, 6AG, 6OR, 6GM, 6RU, 6KW, 6WT, 6RK and 6BO (6GB also!). Roy 6RK has made his appearance with an 829B—fine sig too. 6HK using a QQE06/40 and a folded dipole, awaiting the new modulator. Don 6HK also puts out a nice sig from his pair 6M5 triplers. 6FC has now worked first QSO on 144 over 100 miles with self. Frank puts a very good sig into Perth.

TRIMAX

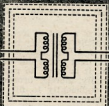
Quality

IS NOISE YOUR PROBLEM?

For many years
Trimax have been
manufacturing a
standard range of
Multi-Shielded Audio
Frequency Transformers.

TRIMAX TRANSFORMERS

(CLIFF & BUNTING PTY. LTD.)
Charles St., Nth. Coburg, Vic.
Telegraphic: TRIMAX, Melb.



These types
are recom-
mended for
existing low
level operation
and will reduce
power frequency
and external noise
pick-up to a lower
level than any other
component noise!

Write for our latest leaf-
let 52/1 detailing these
and other types of low
level Transformers.

Transformers

QLD.: Chandlers Pty. Ltd.
SOUTH AUST.: A. G. Healing Ltd.
Gerard & Goodman Pty. Ltd.
Radio Elec. Wholesalers Pty. Ltd.
TAS.: W. G. Genders Pty. Ltd.

N.S.W.: Radio Equipment Pty. Ltd.
John Martin Pty. Ltd.
WEST. AUST.: Nicholson's Ltd.
Atkins (W.A.) Ltd.
Carylly & Co. Ltd.

DX NOTES BY VK4QL*

It's still a matter of being around at the right time, if you want to work anything decent in the way of DX. The old attitude of "Think I'll go on and work some DX," is not fulfilled in a great percentage of those visits. No warning is given when the opening will be, and a few hours of one particular day is preceded and followed by days of quiet. I myself was a little luckier this month to hear some, but not necessarily work the good ones that appeared.

On the 10th, for example, at 2145z, the 7 Mc. band produced four contents, the prefixes being ZS, OK, W and VK, and on the 13th at 2200z, ZD4, W1, W2 and W3. On the 23th, 21 Mc. was the best I have ever heard it as far as strong DX sigs were concerned, but only W, KH6, ZL were heard. In the evening of the 16th, practically no Ws were coming through on 7 Mc., but XE, KZ5, J, CO and YV were there instead.

On the 20th, 14 Mc. opened to Africa for a brief period in the afternoon, ZS1, ZS3 and CR6 being worked, while VK3 worked ZD4. I did the wrong thing then, as I went to 7 Mc. to see what it was producing, whereas 2AWU watched 21 Mc., and was rewarded by a break through to Europe. 4EL found one afternoon, 0500z, he was able to work Europe on 7 Mc., and they were gone by 0600z. 3CP also got through to Europe on this band at 0645z. 4EL and others have worked Europe on 14 Mc. up to 2359z. So you see from that

that things are abnormal on all bands, no set pattern being followed. The band survey shows:—

3.5 Mc.: 4QL found little in the way of DX, but towards the end of the month, ZL sigs were exceptionally strong, and VR2CO was worked. 5FL, who when I worked him, was portable at Pine Creek, and using 10 watts, said he had worked W, VE and KG6, at dusk on this band. Nice going Ross. 7RK heard a few Ws underneath the noise.

7 Mc.: 3CP has not found the band to his liking, and reports very little of note, other than his one break through to G on the 20th at 0645z, and one morning at the end of the month. Athol also heard HK5CR*, CO2BM*, 4X4BX* (2000z), LU4Z1, SM7AAZ*. 4XJ can hear the Ws OK of an evening, and also landed a good one on phone in FUBAC at 2100z. 4QL found a few interesting calls, and added a new one to bring his 7 Mc. score to 73 worked. Lists VP7ND, ZS3NM, ZSSDE, ZS5LN, W3PDW 2200z, ZD4AB 2200z, WIARE and W2WWP 2200z, W3TBP 2245z, XE2OK, KZ5CZ, J3GO*, CO2BM*, YV5DE*, 4X4DH, K4USA 2320z. With the exception of the Central Americans, most were heard as late as 2200z, which makes 7 Mc. a daylight band. 7RK not doing so well, Ray only hearing the usual run of N. Americans.

14 Mc.: 3CX said that LB2XD, ZSDT, VRTAB, FB8BE, ZAKSAA, LZ1KAB, ZS2MI, ZD4AB, FL8MY have been heard or worked by the VK3 boys. Some of these in the evenings, which is in contrast to this QTH where nights are useless. 4XJ, not so active, lists J*, KB6AX, YV5AZ, KR8IN*. Les finishing

Ws OK most afternoons. 4QL lists 4W1MY, HP1LA*, HP1BR, EA8BF 2245z, ZB21*, Z3SK*, ZSH*, CR6BZ*, FL8MY, TA3AA. The jackpot was hit, by my giving VS5ELA his No. 1 QSO on setting up in Brunei, and bringing the total worked to 179. Incidentally, after about the third QSO, the gang were calling him on his own freq., but not getting anywhere. 7RK remarks that most of his listing in normal times, he would not mention. You're not on your own in that Ray. He shows 4X4BN, 4X4RE, 4X4DK, KB6AX, KM6AX, Z4XP, CN8ET, CN8MI, HZ1MY, ON4RM*, OZ8F, EA3CY, FI8AB, CR9AF, VR3C, FB8ZZ* 0020 and 0115z, FB8BB, ZS2MI. Ray wore his fingers down after the last two, and said the VK5 gang fastened on to ZS2MI on 19th. TA3AA, YSIO, and LZ4BB complete the list. Also says KV1MY, LX1DC, ZAKSAA are known to be active.

21 Mc.: As well as 2AWU getting through to the Europeans, think there were others who made it, but calls are unknown. 2AWU lists YU1AD*, G6GN*, G6HL. Walter is interested if his QSO is the first legit QSO VK/Europe. 4XJ found KH6 only. 4QL KH6*, W0*, W2, W4 and W6. 7RK nothing further than ZL. At the present time, this band is good up here for VK2 and VK3.

28 Mc.: This band seems to be at the all time low and most hear nothing to work.

The QSL situation is like the bands, not much doing. 3CX received GD2FVR,

VQ1RF, FQ8AC, TF5TF, Y13EFE, VQ8AF, ST2GL, 4XJ, YU1BK, VP6SD, K6BDX, KH6QA/KC6, KV4AA, 4QL: 4W1AC, KV4AA 3.5 Mc, VRIA, YU1AD, CT3AN.

The "gen" section this month has very little of interest. VS6CG was unable to make the projected trip to VS5 with W0ELA. ZC2MAC is reported to be now QRT. On 1st August there was quite a big reorganisation of frequencies amongst the Commercial stations, in VK at least, and it will be interesting to see how our bands fare if International changes are taking place round the same time. 7RK offers a suggestion to those seeking more training. Listen to ZKF, of the R.N.Z.A.F., on 3320 Kc., Saturday and Sunday from 0700-0800z. Speed starts at 10 w.p.m. and finishes at 30 w.p.m. As from 26th July, the KA prefix supersedes that used by JA stations.

Finally it is getting more difficult each month to "make ends meet" for this page, and if the DX gang can't find time to let me have the necessary to "make ends meet," I will have to consider cessation of compilation of this page. So do you help, or do we close down? It's up to you.

DX C.C. LISTING

PHONE			
Call	No. Ctr.	Call	No. Ctr.
VK3BZ	3 163	VK4JP	8 114
VK4H	10 153	VK3AWW	2 109
VK4HR	12 160	VK4D	20 209
VK4JD	1 185	VK5MS	24 269
VK4JL	2 152	VK3RG	3 128
VK4KS	9 152	VK2ADT	13 102
VK6KW	4 150	VK2AHA	15 102
VK3LN	11 141	VK3GJ	10 102
VK4JF	21 135	VK6JP	19 101
VK4JE	7 133	VK4ET	22 101
VK4WF	16 130	VK3IG	5 100
VK4WJ	17 122	VK3GG	13 100

G.W.

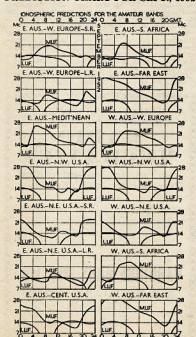
Call	No. Ctr.	Call	No. Ctr.
VK3BZ	3 207	VK2GL	8 114
VK4HR	8 182	VK4RF	11 125
VK3PH	15 177	VK3YD	27 123
VK4EL	9 167	VK3KJ	3 128
VK3EO	2 152	VK3J1	25 118
VK3CN	1 151	VK3PL	38 117
VK3GV	16 151	VK3HT	37 117
VK3CX	26 150	VK3UM	12 116
VK6SA	28 150	VK7LJ	24 114
VK3W	29 150	VK4DA	7 113
VK3YV	4 143	VK7LZ	17 112
VK2QL	5 143	VK4RC	13 107
VK6RU	18 141	VK3YL	39 106
VK3HT	23 140	VK3ZG	3 105
VK3KB	10 138	VK2VY	34 103
VK5FH	31 134	VK3APA	14 101
VK3JL	33 131	VK3JL	33 101
VK4DO	30 129	VK2OA	32 101
VK3JE	21 129	VK7KR	22 100
VK3XK	30 126	VK3AZ	35 100

OPEN

Call	No. Ctr.	Call	No. Ctr.
VK3BZ	4 220	VK3VQ	46 116
VK3H	7 206	VK3AWW	95 115
VK3JE	12 190	VK3JA	43 114
VK6RU	8 196	VK2ADT	14 113
VK4FJ	32 173	VK4RW	52 113
VK3EG	4 171	VK3LZ	17 112
VK6KW	13 171	VK3MM	49 111
VK2DI	2 170	VK4HC	21 110
VK3KX	167	VK3KX	3 110
VK4EL	10 167	VK3HO	38 110
VK4KS	24 167	VK2CZ	25 108
VK3AD	23 163	VK3KJ	3 105
VK3LN	29 144	VK3AWN	36 105
VK3PL	28 143	VK3VN	18 104
VK3AD	5 139	VK4W	24 104
VK3OP	19 137	VK2EP	14 104
VK4WF	40 137	VK6P	50 104
VK6RD	22 136	VK2HE	17 103
VK3HT	41 135	VK3KJ	3 102
VK2ADE	28 133	VK2T	37 103
VK3GV	48 132	VK6DX	42 103
VK4JL	9 128	VK3KJ	3 102
VK2AHM	20 125	VK4TY	35 102
VK2NS	16 123	VK3H	51 101
VK3J1	3 119	VK3CX	6 100
VK7LZ	23 116	VK2TG	39 100

* Fit./Lt. F. T. Hine, No. 10 (G.R.) Squadron, R.A.A.F., Townsville, Queensland.

PREDICTION CHART FOR SEPT., 1952



FEDERAL, QSL, and DIVISIONAL NOTES

Federal President: G. GLOVER (VK3AG);

Federal Secretary: G. M. HULL (VK3ZS);

Box 2611W, G.P.O., Melbourne.

NEW SOUTH WALES

President: John Moyle, VK2JU.

Secretary: David H. Duff (VK2EO), Box 1734 G.P.O., Sydney.

Meeting Night: Fourth Friday of each month at Science House, Corner Gloucester and Essex Sts., Sydney.

Divisional Sub-Editor: Harry Powell, VK2APY,

9 Russell Avenue, Wahroonga.
Zone Correspondents: North Coast and Tablelands: Noel Hanson, VK2AHN, Ryan Ave., West Kempsey; Newcastle: Ron McD., Stuart, VK2ASJ, 88 Dunbar St., Stockton; Centralists and Lakes: Harry Hawkins, VK2YLX, 27 Combs St., Cessnock; Westerns: W. L. S. S. VK2WH, Cambiljora, Forbes; South Coast and Southern: Roy Raynor, VK2DO, 42 Pettit St., Yass; Eastern Suburbs: Don Knock, VK2NO, 42 Yankov Ave., Waverley; Northern Suburbs: Harry Powell, VK2APY, Russell Ave., Wahroonga; St. George: Chas. Coyle, VK2YK, 84 Carlton Cres., Kogarah Bay.

VICTORIA

President: G. Dennis, VK3TF.

Secretary: L. R. Bradshaw, VK3XS.

FEDERAL

PAO on 21 Mc.

The V.E.R.O.N.—Northern Section of the I.A.R.U.—have advised that the PAOs are now permitted to operate in the new 21 Mc. band. The official list of frequencies for the use of licensed Amateurs in the Netherlands is as follows:—

3500—3800 Kc.	144—146 Mc.
7150—7300 Kc.	425—450 Mc.
14000—14250 Kc.	1215—1300 Mc.
21000—21450 Kc.	2300—2450 Mc.
28000—28700 Kc.	6850—6950 Mc.
	10000—10500 Mc.

1952 REMEMBRANCE DAY CONTEST

Judging by the "Solid Walls of QRM" evident on 7 Mc. particularly during the 7 Mc. band—during the Remembrance Day Contest last month, it seems a certainty that the participants reached all time high, indicating an annually increasing interest in this most worthy Contest.

Particularly noticeable was the gentlemanly operating technique employed by many operators, "coming in" on top of another station—in other words, until serial numbers had been satisfactorily exchanged. This consideration, from the other man was exemplar of good "Hamming," and will no doubt show up in the final results by the actual contacts made by all participants.

The members of the N.S.W. Division Contest Committee have again been co-opted by F.E. to function as the Federal Contest Committee, and all participants are urgently requested to forward their Logs through their respective Division without undue delay so that the arduous work of checking the Logs will not be unnecessarily impeded.

The sooner the Logs reach the Committee, the sooner the results will be known. September 12 is the final day the Logs can be received by the Committee—See Rule 16, August "A.R."

Incidentally, the Contest again proved that the 7 Mc. band—in particular—is not as "useless" at night as most Amateurs think. So what about using it more!

FEDERAL QSL BUREAU

RAY JONES, VK3RJ, MANAGER

Cards from HZ1HZ state, "This city, Mecca, has no other religion but Islam, and no other foreigners but Muslims."

A card from VB2BC relating to a phone QSO on 6th April, 1952, is addressed to VK3P— and states, "Thanks Redge." The card from HZ1TA confirming phone QSO on 16th January, 1952, had addressed to VK3AAV is still unclaimed. Owners please apply this Bureau.

Stan Mayne, VK2AS, writing under date of February, 1952, states, "Hurricane hit me hard, smashed up the business, but my home safe. The salt air got into all trannies and they blew up one by one. The business lost the top storey and the course the fruit ceiling couldn't keep out the rain, so for a month or so it poured in and we had to wade through water. May get on again with QRP soon."

Felix Frauchette, FK8AC, on furlough in France, has been issued with the call sign

Administrative Secretary: Mrs. J. Hurley, Law Court Chambers, 191 Queen St., Melbourne.

Meeting Night: First Wednesday of each month at the Radio School, Melb. Technical College.

Zone Correspondents: Westerns: C. C. Waring, VK3YW, 12 Skene St., Stawell; South Western: P. Perkins, VK3APK, 182 McKillop St., Geelong; East: North Eastern: D. Buchanan, VK3PD, "Boorondal," Warring; Far North Western: M. Folie, VK3GZ, 101 Lemon Ave., Mildura; Eastern: H. O. Kellas, VK3AHK, Tuenmba; North Western: C. Case, VK3ACE, Cumming Ave., Birchip.

QUEENSLAND

President: J. Jeffs, VK4VJ.

Secretary: J. F. Pickles, VK4FP, Box 638J,

G.P.O., Brisbane.

Meeting Night: Third Friday in each month at the L.R.E. Rooms, Wickham St., Valley.

A Divisional Sub-Editor: A. Guldford, VK4AP, 36

Bramston Tce., Herston, Brisbane.

SOUTH AUSTRALIA

President: W. W. Parsons, VK3PS.

Secretary: R. G. Harris, VK3RR, Box 1234K,

G.P.O., Adelaide. Telephone: J 1151.

FMQZ, and expects to come on the air for three months commencing middle September. During this period he will be located at Timaris.

Interesting details of life and conditions on Macquarie Island are given by Eric Macklin, VK1EM. Winds of 80-90 m.p.h. velocity are commonplace and constitute the worst enemy of radio, by bringing down the antennae. A new 100 watt Tx to replace the 50 watt job now in use, has been constructed and will take the air shortly.

During end of July, WOELA was located at Brunel signing VSEELA. The itinerary provided for a visit to Sarawak but radio conditions were so poor that he abandoned the projected visit and returned Stateside.

It is stated that it is now permissible for DU stations to contact all other Nations. While contact stations are not yet permitted, not sighted, observations on the air support the rumour.

— . . . —

NEW SOUTH WALES

The July meeting of the N.S.W. Division was held at Science House on Friday, 25th, with the President, Mr. John Moyle, in the chair. John looked a bit battered with a piece of sticking plaster over his right eye and deemed it necessary to forestall facetious remarks by explaining at the outset that he had been in bed with two carbuncles. It was announced that the Annual Field Day would be held at Way Wey on 16th November and it is hoped that it will be an even bigger success than last year's effort. For the date down in year appointment book now so that you will keep the day clear of other engagements.

Dr. Bob Black, VK3GZ, VK3GZ/B/VF, was then called upon to talk on his experiences in the Trobriand Islands and the Solomon Islands with a Type A Mk. III rig. The talk was well illustrated with lantern slides and the rather sparse attendance, which braved the very inclement elements, learnt quite a lot about geography and ethnology as well as portable operation in the tropics. Bob exhibited a wealth of dry humour which one had hardly realised was there and gave us all a very satisfying experience.

After the lecture, Bob answered a barrage of questions on all sorts of subjects and finally persuaded Dr. Holt, of Honiara, Guadalcanal, on to the platform to assist him. The discussion became very medically technical at times but none the less interesting. Dr. Holt has a

Meeting Night: Second Tuesday of each month at 17 Waymouth St., Adelaide.
Divisional Sub-Editor: W. W. Parsons, VK3PS, 10 Victoria Avenue, Rose Park.

WESTERN AUSTRALIA

President: W. E. Coxon, VK3AG.

Secretary: J. Mead, Box N1002, G.P.O., Perth.

Meeting Place: Perth Technical College Annex, Mounts Bay Road, Perth.

Meeting Night: Second Monday of each month.

Divisional Sub-Editor: R. H. Atkinson, VK5WZ,

Box 127, Geraldton.

TASMANIA

President: R. O'May, VK7OM.

Secretary: F. J. Evans, VK7FJ, Box 371B,

G.P.O., Hobart.

Meeting Night: First Thursday of each month at the Photographic Society's Rooms, 163

Liverpool Street, Hobart.

Divisional Sub-Editor: V. Dore, VK7UD,

Zone Correspondents: Northern: C. A. Cullinan,

VK7XW, 12 Montrose Place, Launceston;

North Western: R. K. Wilson, 4 Menal St.,

Burnie, Tasmania.

VR call sign but has not been very active lately mainly on account of receiver trouble. General business and suggestions for suitable lecture subjects were called for. A few good suggestions were received, but if anybody has any ideas, please trot them along to the Hon. Secretary. It may be some time before a suitable lecturer is teed up but finding out what would interest the members is the first part of the battle and if you want to know about some particular matter there are probably plenty of others who do so too, so let us hear from you. The meeting concluded with a short report from the Federal Council.

WESTERN SUBURBS

2AXZ not heard much of late, busy with his own projector and other photographic gear. 2AAB has better modulation since he cleaned things up, nice signal now Barry, what about some DX? 2ARW on the band with nicely modulated signal, 2PZ heard you again, yes, 2APT is back on his beam, now of course horizontally polarised; but the signal on the vertical was very fine indeed. 2N's beam will soon be rotating. 2XN building test gear. 2XJ worked wonders with his signal of late, modulation much improved also. 2AWU working the DX on 21 Mc. 50Q back on again recently. 2BIX logged the other night on c.w.

The Burwood Radio Club is meeting each Tuesday night at Greenwood Hall, Liverpool Road, Enfield; the 14 Mc. band is being tuned by degrees, should be on the air in near future. Visitors always welcomed and assured of a good night.

2XU heard on 7 Mc. recently, getting a little practice for the R.D. Contest. 2AER still bashes

SITUATIONS VACANT

RADIO MECHANICS

required for manufacturing Transmitters and Receivers.

Permanent position and good opportunity for successful applicants.

Apply:—

HARDINGE BROS. PTY. LTD.

45-57 DIMBOOLA ROAD,
HORSHAM

Phone: 542

W.I.A. ACTIVITIES CALENDAR

October 4-5: VK-ZL DX Contest (all hands), C.W. Section.

October 11-12: VK-ZL DX Contest (all hands), Phone Section.

December 6-7: European DX Contest (all hands), C.W. Section.

December 18-19: European DX Contest (all hands), Phone Section.

WHAT DO YOU THINK?

The Magazine Committee have, from time to time, received letters suggesting the elimination of the Divisional Notes.

In view of the restricted size of the magazine, the Committee are seriously considering acting on this suggestion.

However the Committee consider that Divisional Notes of a general character should be published. That is notes on the general activity of each Division; personal notes will be completely eliminated. What do you think?

SOUTH WESTERN ZONE

John 2AFQ heard on 80, has a rhombic on 80 with 240 ft. per side about 40 ft. high; Rx operates off 35v. lighting plant and Tx on 230v. on a 1 1/2 k.v.a. motor alternator. Heard on 80 with a nice sig. Lee 2PI active on 40 and 80. Reports that the Canberra Radio Club are now the proud possessors of a new club room, 80 ft. by 15 ft. also has a very good location. All the best to members at Canberra.

Gordon 2A1Z active on 40. Ron 2RII has good sig on 80, 40 and 20 using a 250 ohm cathode mod.; Ron's pet subjects at the moment are a.c. units, how to burn out r.f. meters, and how to cure sore throats. Jim 2D0 heard on 40 and 80 with a good signal. Geoff 2BZ also on 80; he is playing with a c.r.o. at the moment, also building a new Tx for 6 mX with an 854. Conditions have been poor on 40 in this Zone during the month especially for the Zone hook-up. As from the first Sunday after the delivery of this month's "A.I." the South Western Zone hook-up will be held on or near 3.7 Mc. at 7.30 p.m. Sunday evenings.—2AJO.

COALFIELDS AND LAKES ZONE

It seems incredible but Ken 2ANU felt victim to power cuts this month—self-imposed restrictions. Geoff finally got the 2 mX rig on the air in 12 watts to an 825 heard at 35N Sydney. No contact over that path to date as the receiving side is not yet straightened out. Harry 2YL paid a visit to VK4 on holiday and managed to repay a visit to 4HA. 2KF has a good signal on 20 and 40, while a little bird whispers that 2KZ has devoted his attention to a shiny new automobile. 2BU did nicely on 2 mX and has joined the throng in sneaking across the mountains to Bathurst, congrats Major.

2GA has xtal converter for 2 now working. 2KR is to be heard on 6, 2 or 40. 2ARV is a hard man to keep up with. He has been North to VK4 and back home only to turn up in 2VU's shack in Singleton for a demonstration of cross-band duplex with 2ADT. Only explanation seems to be the efficiency of the V.S.G. Phil 2TX has returned from a trip abroad and is making preparations for an early appearance on the air. Singleton max soon have another active Ham as old timer Frank Bassett is reported to have applied for a call after many years of silence.

HUNTER BRANCH

Over 30 members and visitors were present at the July meeting held at Technical College, Tighes Hill. Young and old members agreed they learned much from the instructive radio and electronic film features which were shown by courtesy of the College authorities and the Newcastle branch of A.G.E. Ltd. Visitors welcomed by President 2CS included Max Henschel formerly OKCMB. All very pleased to see Chris 2PZ who represented the CoEAS at the meeting. On behalf of the branch, the President extended hearty congrats to John 2DZ who has recently been elected President of Newcastle Division of I.R.E.

Despite poor conditions, there has been more activity this month. On a recent Sunday night it was like old times with a local 40 mX phone hook-up. 2AGD making a tape recorder. Ernie 2FP was in the hook-up! The proposed 20 mX antenna will not be operated. Ken 2CW spends a little time on 40 mX phone and 80. Bill 2AXM has his 813 final on 40, has miniature rig on 80 mX. The complete build by Harold 2LV is making slow but sure progress. Stan 2YU regular at meetings but not on air. Always busy. Neil 2XY is converting to TAIC for 2WP. Bill has shifted QTH to Charlestown and expects to be active shortly. Dave 2BZ moving to good v.h.f. QTH at Lambton. Fred 2AGY on 40 and 20 and 16 mX; using 7 Mc. 1/4 wave vertical directly fed from antenna coupler.

40 mX DX still attracts the local c.w. men. Secretary 2SF getting good reports from Ws. Harry 2AFA gets out well too, receiving some DX QSLs now. 2AAI looking forward to holidaying and receiving his first DX from D.I. Jim 2CX making his 144 Mc. 3/3 rotatable. 2AFX copying the gang on 2 mX, Harry would like a check on his Tx.

Combined Field and Social Gathering.—This great event will be held at Blackall's Park, Lake Macquarie, on Sunday 28th September, and a cordial invitation is extended to all Sydney and Country Hams bearing their own QVA. Valley boys to come along and bring the family. Special attention will be paid to the XYL, YL and Harmonics entertainment, including a 16 m.m. film show which will commence right after lunch. There will be free ice creams, soft drinks, etc., and hot water will be provided. Bring your own lunch. The show will commence at 10 a.m. and among the radio events will be 144 Mc. hidden Tx hunt and this will have some very special features! It is most important that you advise our Secretary, Varley Pitton, at Phone B1874 or Box 13, Newcastle, if you

are coming and the number and composition of your party. Adult guests will pay the small fee of 3/6. A train will leave Newcastle at 8.40 a.m. and return from Blackalls at 5.20 p.m. It will be a great day, don't miss it!

Maitland Meeting.—The September meeting will be held in the 2HR Auditorium, Maitland, on Friday, 12th September, when we will be privileged to hear a lecture by Angus Robertson. Newcastle boys travelling by car to meet western side of the Junction at Tudor and Hunter Street West. Don't miss a very good evening.

VICTORIA

FAR NORTH WESTERN ZONE

Members of the zone have been on a rebuilding programme for the past few months. Chas 3TI constructing grid dip oscillator, new frequency meter, and re-building Tx. Noel 3AUG hopes to have a rotating beam. Fred Harry 3MF very quiet these days, XYL plus new junior op keeps him busy, no time for Ham Radio these days. Jim Fowler has completed his shack and hopes to be on the air in the very near future. Graeme 3SN recently

Low Drift Crystals FOR AMATEUR BANDS

ACCURACY 0.02% OF
STATED FREQUENCY

3.5 Mc. and 7 Mc.

Unmounted £2 0 0

Mounted £2 10 0

12.5 and 14 Mc. Fundamental
Crystals, "Low Drift",
Mounted only, £5.

Spot Frequency Crystals
Prices on Application.

Regrinds £1 0 0

THESE PRICES DO NOT
INCLUDE SALES TAX.

MAXWELL HODEN
15 CLAREMONT CRES.,
CANTERBURY, E.7,
VICTORIA

NORTH COAST ZONE

Conditions on the bands have not been really inspiring this month, particularly for local stations. 2AAH appears to be the only band that one can rely upon for this purpose. Short bursts have been heard from 2XO, 2QV, 2SR, 2WQ, 2ADE and 2NY on 40 and quite a few DX stations have been heard calling 2XO, 2WQ and 2DX on 20; 2I and 28 Mc. appear to be very quiet. Roy 2NY has developed an interest in tape recording, whilst fellow station Ham 2WQ not only has a severe cold but had the misfortune to "do in" his mike.

Visiting Kempsey to see his mother on her 80th birthday was Jim 2AR who also found time to spend a few hours with 2AHH. Jim has gone away with the intention of getting onto 80 after a few QSOs from Kempsey. By the time these notes are published the Remembrance Day Contest will be over and I hope the North Coast boys will have had good hunting and as many as possible will have enjoyed the true spirit of the Contest.

MAKE A NOTE IN THE LOG

The Victorian Division will be exhibiting at the All Models Exhibition to be held in the Melbourne Exhibition Building from Saturday, 30th August, to Saturday, 6th September.

It is hoped to have transmitters running on 580, 144, 50, 14, 7 and 3.5 Mc. As band conditions are very poor, we would greatly appreciate any effort on your part to try to contact the VK3WI transmitters. The stall will be manned from 10 a.m. to 10 p.m. each day, and if a contact is made, please use plain language as it is hoped to have both the in and out signals audible to the general public.

had holiday in Melbourne. Max 3GZ on at week-ends only, busy with house renovations and no time for Ham Radio. Frank 2FC heard on c.w. occasionally, puts a solid S9 signal into Mildura. Geoff 2AHM working a bit of DX on 20 during afternoons, has improved his modulation by modulating both screen and control grids.

NORTH EASTERN ZONE

The North Eastern Zone's Annual Convention has come and gone after being held in the Mechanics Hall in Tatura on 20th July and ending in its wake as President 3UI, Sec.-Treas. 3JC, zone correspondent 3FD, and Communications Officers, that is someone to report on the VK3WI Sunday morning broadcasts, etc., etc. 3KR and 3WA. A pleasingly large number of forty members and visitors attended, including some of the senior officers of the State and Federal Executive. It was decided, amongst other things, to hold the zone hook-up on 20 mx instead of 40 mx if the conditions on the latter band are not suitable for intra-state working.

Heard at the Convention. Howard 3JV in good form again. That 3IJ is going to do a D.C.A. technician standardisation course in Melbourne, leaving Chas 3ACW to hold the Institute forth in Avenel. Jack 3FP has built up ex tempore mobile gear he hopes he won't have to use. Later heard that Associate Rex Anderson had passed his A.O.C.P., congrats OM. Must keep some news on ice men, so more next month, Editor and the weather permitting.

CENTRAL WESTERN ZONE

29th and 31st September—days to remember and keep free—are the days of the Central Western Zone Annual Convention, to be held this year at Horsham. You remember the Ararat Convention last year! It was a good one, Horsham will be better. There will be a hidden Tx hunt on 3.5 Mc. with a new slant, a free for all scramble which will test the portable rigs under tough conditions, and things to see for those not out hunting or scrambling. A contest will be held for the best piece of home-built gear on exhibition, with a worthwhile prize.

We aim this year to plan for the XYLS and harmonics, too (so that the OM will not be having all the fun), to chaps bring along the wife and family. We have a good park avail-

TECHNICAL ARTICLES

The Technical Editor reports that the technical articles' bag is very nearly empty, so how about it chaps?

Don't forget the beginners have to be catered for, so articles on beginners' equipment are also welcome.

able with plenty of playing facilities for the children and a real get-together for everybody.

Those of you who can come for the two days and require accommodation contact Byron Harding, 57A, 32 Natimuk Road, Horsham (Phone 379 or 542), by phone, letter or telegram, but don't leave it late or you may sleep in the park.

Further details will be put over VK3WI, as they come to hand. Make a date to be in Horsham on Saturday and Sunday, 20th and 21st September. Will we be seeing you?

EASTERN ZONE

3AHK has blown up another power transformer on his modulator, that's the third isn't it Ossie? Anyhow, that's one less earbasher on the air. 3SS and 3SG using new Rx's. 3SS working on a 100w. rig using an 813 in the final. David, the junior op. at 3SS, sat for his ticket during the month, looks like another call sign for the zone. Alan Jacka, at Bairnsdale, also sat for his ticket, passed everything except the morse receiving. Jack 3FX expects to be putting out a signal from Bairnsdale shortly. 3ABP continues to put a good signal from Sale, although the rest of the boys from over that way are silent. It is rumoured that Howard 3VG may be heard again soon. 3AGF expects to be forsaking us for the charms of YKA shortly, best of luck at your new QTH Geoff. There are two new Hams in the zone, they are 3AOD and 3VN, both are located in the Latrobe Valley.

The Hams that took part in the emergency operation during the floods, received personal

letters of thanks from the Chief Commissioner of Police.

The last meeting of the Sale sub-branch was held at the home of Graham 3GO. It was decided to hold a portable-mobile field day in the Orbest district late in September or early in October. This is with a view to future emergency operation in that district, so blow the cobwebs out of the rigs chaps and let us have a good roll-up.

Whatever you do don't forget the Eastern Zone Convention to be held at Bairnsdale on the 1st and 2nd of November.

SOUTH WESTERN ZONE

3JA and 3AKR are building new rigs. Jack hopes to be on the air soon, and Kevin is just putting the final touches to his rig. 3GR heard on 80 mx phone using 2 watts, doing well on small rig. 3HG has nearly got all his problems regarding remote control for his diesel generator ironed out and soon hopes to operate his rig using all the comforts of home. Pat 3ADN heard on the hook-up the last few Sundays.

Jack 3ALP bought a wind generator at Werribee, almost ready for transportation back to Geelong. 3II having had luck with his power transformers, is using 3AGD's rig while John holidaying up in the snow at Mt. Bulla complete with Type 3 and batteries. The best wishes of the zone go to Bert 3BI who has been presented with a new junior operator in the way of a son. 3NU has not been heard of for quite a while so any news re his whereabouts would be greatly appreciated. John 3ASV is still mad on car racing and, like quite a few other members of the zone, is building up a real super duper rig.

GEELONG AMATEUR RADIO CLUB

At the beginning of the month the new President, Mr. Bob Wooley, 3IC, occupied the chair. After the business had been attended to, a letter was read to members which had been sent by Bill 3BU thanking the members for their kindness and expressions of sympathy in his recent loss of his father. The late Mr. Brownbill, although not a member of the club, took a keen interest in it, taking part in many field days.

At the following meeting, a large number of members were present. The syllabus for the evening was a lecture by Alf 3AJP on Taxi Radio and had a complete set-up on display. Later he conducted a tour of inspec-

RADIO ACCESSORIES?

Yes—we have them in PLENTY!

Choose from our large range of:—

Transformers, Chokes and Sundry, for Audio and Power—Resistors in Abundance, enough to fill the Tower. Valves for use in every sphere—Condensers large and small, Meters, Testers, Instruments—Yes Sir, we sell them all.

Distributors for—EDDYSTONE Condensers, Dials, Knobs, etc.

BELLING LEE Terminals, Plugs, etc.

BULGIN Switches, Bezels.

You give the Orders — We give the Service

GERARD & GOODMAN LTD.

192-196 RUNDLE STREET, ADELAIDE.

W 1541

Page 15

not usually "snooty." I would like to point out to this Harry person that to the best of my knowledge we have never had any of the "snooty" and descend to the level of the Christian names with a rising copy-boy, no matter how good his notes may be. Possibly there is a person in the room who is pulling down the salary that "A.R." now pays me, I might call him Atkinson, or even GWZ, but Harry, I don't know. I am sorry Harry, but I just could not do it.

WESTERN AUSTRALIA

By the time this is in print the 1952 R.D. Contest will have come and gone and where will stand VK6? At the head of the list, I hope! But if it doesn't you know who is to blame, don't you? There may be those who are under the impression that the fellow who says "Oh contests! I won't send logs in—it only means helping VK6 to win more honours and glory for himself!" is a person with that selfish attitude; I don't! But that's for ordinary contests; the R.D. is different. No one Ham "wins" it—it is a joint effort by the State team, with the much maligned "limelight-seeker" of normal contests doing all the bullocking for you while the rest of the team do the minimum of contacts and then retire. So I hope every one of you who now read this can say, "Yes, I can do it." Well, may the State judge; my log was sent in and it is conformed to requirements."

On 13th July, VK6WV gave brief details of Dr. Munro's work in the Josephson and "troughs" that move about. George also touched on Villard's "Q Multiplier," which sounds like a collection of the same gentleman's "Selecto-jet" which some of us have tried. George said it was hoped new multipliers would be made. "Q Multiplier" in VK6 if suitable components could be obtained and if so, further doubt would appear about the "Q Multiplier" and "troughs." Incidentally, it sounded that morning as though Dr. Munro's "cylinders" resent being talked about for the "Q Multiplier." It was a matter that some day that I heard (and called) FY2BIB on 7 Mc., but the queue of Yanks wouldn't yield an inch to a superior class of operators. There was usually plenty of c.w. to be worked on the band even if it did mainly consist of three professions: the local time zone, the local time zone (6030 local time) yielded nothing. However, towards the end of the month a QSO was managed with a 100 Mc. station. It was hard to imagine who the more surprised.

Note These Dates, Dates: 5th September—Combined Dinner of the W.I.A. and Radio Society, A.A. Elected available. The committee members respectively, 11th September—M. Scramble. Blow the dust off the rig, fire 'er up and get in amongst it. It is a matter that I last, but it is a lot of fun. 16th September—Monthly General Meeting. Remember, meetings are now held on the third Tuesday of each month.

Snooping and Scooping.—6XG writes that activity at Katanning is at a low ebb. Says 6XG that he would like to see a new station for a re-enamelled golf ball. 6XG's main interest seems to be a re-built V.F. One old, writes, George, is much more than a "like the Southern Girls' Choir. Another Ham who has joined the "swing club" is 6RT, XVJ. Enid, also enjoys the "swing club" and white. No one knows the Kellersbergs at date of writing. Hurry up, Cyril, we're all waiting for you. Looks as though his arrival in that town may be the signal for the encouragement of the local club, and to study for the ticket. 6VK prefers c.w. but comes on occasionally with a nice phone signal, the result of screen modulating the final with a 6L. Vic is getting to know a lot of the boys through 7 Mc. contacts. Just as well 6MO seems an even-tempered sort and the 6L and 6VK are well-learned in these matters" answered the phone and when a voice asked for me, requested the caller's name in a banal business-like manner. The voice, without hesitation, replied "Frank Beadie." That tipped it! Too much! I had to have to go to bed. Thanks for the dope on metal rectifiers, Frank. A nice gesture.

Rolo came to light again this month with some notes and these should appear in the 1952 R.D. Contest. The notes are on the lower bands are: "21 Mc., the only VK6s I know to have been on are 6WU, 6AR and 6OTB. 6OTB has been alone on 28 Mc. and no one has up to two-element which could be for 21—although I haven't heard him." 28 Mc., Nothing heard.

Last month, no doubt to my long-windedness, parts of the notes were deleted by Mr. Hon. Ed., including a reference to a certain state of affairs. I feel quite certain as President. No matter—we can be as rude to each other as we like from now on, we're pen palsey-walsey, aren't we, Warwick?

TASMANIA

Unfortunately, this month, time does not permit covering the monthly general meeting, which is to be held after the deadline for getting the notes away. However, I feel quite certain that TAJ's lecture on "10 m.m. Sound on Film" will prove highly interesting, and will attract a good attendance.

Ever this appears in print, another R.D. Contest will have retreated into the past—and in the quiet which follows such intense activity, I feel it a pity that it is fitting to be thought back to those Hams in whose commemoration the Contest was held. Fate decreed that the contest should not be held, but I hope their memory will be perpetuated by many more Remembrance Days to come.

Latest news to hand on TJB is that he hoped to leave Japan in August. In order to do a course in Melbourne—and who knows?—Melbourne is not so far from Hobart these days. Once again, congratulations to TJB on his appointment as Radio Inspector. We feel sure that things will continue to run smoothly for you Brian, and that a minimum of trouble. Ted TBJ has now shaken the Southern dust from his feet, and is now resident at East Devonport. We will have to be on hand on some of the bands, so grab a bit of time off from that new love and let us hear from you.

Also some news to hand on TMY who recently changed over to n.c.m. no carrier, suppressed modulation, and you can hear him on 14 Mc. with the accent on v.h.f., and at the present time is very QRL. We look forward to you re-joining the gang Alan. And now, as we have no more news to hand, we are an unhappy member, with non-working QXer is most anxious to meet up with another member who has some news to hand. For further particulars, please contact the Secretary—Oh, Mavis!

TDH has now moved to a brand new home out Glenorchy way, and is finding plenty to do. As a temporary measure only, a certain small room has been taken over for the Ham rear, and an not alone in the village, the veg. should incorporate additional filters in all power supplies.

Two metres has been rather tranquil, but there have been one or two violent spasms which prove that though it may be down, it's far from dead. The 14 Mc. station is on the straight on 144 Mc., so a little more haste is called for than that modulator Bert. I believe that the only ham who has not yet been an endeavourer to keep the ball rolling with very successful all-mobile, all-talking QSOs. TFM has at last acquired the long awaited 600 side tranny, and assures me that everything is well in hand for early activity.

NORTHERN ZONE

Col TZL has received his certificate as highest scorer in the State for the last Ross Hull V.H.F. Memorial Contest. Zone Secretary Gordon YGM busy building a multi-band tank for 7x and new multi-band antenna coupler, can now change bands in about 10 seconds; a new v.f.o. is also on the way. Looking browned out, and with plenty of news of G land, TJB returned early in August after his trip abroad. He is the Lew. Ed. and is a very active in the near future. Tape recorders are in the news again as TTE is building one up, and THY wrestling with a unit for a tape.

TDH looks to have hit the big air, so it has arrived at the new QTH. TRB is another who should be heard again soon. TLX read with glee the comments about 7 Mc. and 6L in VK6J's "Sunspots and DX" in August A.R. Then the glee changed to gloom when the super antenna came down. It was a power transformer getting a signal on for the R.D. Contest. Heard that VR2AS had the misfortune to lose his antenna system in a recent hurricane; Sam is a VR2 who always offers a helping hand to VKs and he QSLs.

NORTH WESTERN ZONE

The Annual Meeting and Dinner was duly held at the home of Mr. M. Richardson. An

election of officers was held but no alteration was made, the officers being: President TKB, Secretary and Treasurer TSP, and Zone Co-respondent R. K. Wilson. Mr. D. Richardson agreed to be code instructor for the new classes. Our sincere thanks go to Mr. M. Richardson for his untiring efforts toward the working of the zone in the past year and also for securing a room for the purpose of holding classes and meetings.

Those present were E. Sheldrick, S. Medford, M. Richardson, R. Richardson, K. Hancock and R. Wilson. After the meeting a very nice supper was enjoyed by all.

HAM ADS

9d. per line, minimum 2/-.

Advertisements under this heading will only be accepted from Institute Members who desire to dispose of equipment which is their own personal property. Copy must be received by 4th of the month, and remittance must accompany advertisement. Calculation of cost is based on an average of six words a line. Dealers' advertisements not accepted in this column.

FOR SALE.—BC966A Transceiver, brand new; Type 98 field strength meter with telescopic aerial, meter and valve, new; Command Receiver, 3-6 Mc., new; A1 C.R.O., complete all valves and tube, new. Also 3BZ A.W.A. Teleradio Xmitter with microphone, relay, xials, latest model, not disposes, either 12 volt d.c. or 240v a.c. Apply G. Laver, Fish Creek, Victoria.

FOR SALE.—Kingsley BR7 Receiver, complete with coils and instruction manual, less power supply and speaker. Best offer. S. Ferguson, Miller Street, Tongala, Vic.

FOR SALE.—733D High Freq. Rcvr., complete xials, tubes, as new, £7/10/-, 465 Kc. Billey type CP1 Xtal Filter Unit, £2; VCR139A Cathode Ray Tube, new, 35/-; Copy National type PW-O Slow Motion Dial, £5. R. Jepson, 12 Camden St., St. Kilda, Vic. Phone (business hours) MX 4641, Extn. 210.

FOR SALE.—75 ft. Amphenol 300 ohm twin lead and 35 ft. heavy 140 gauge twin lead. In original package with instructions for 20 mx folded dipole. Never used. VK3BG, 25 Panoramic Rd., N. Balwyn, E.9, Vic.

SELL.—Wavemeter type W1117, good clean condition. 0-500 Microamp. Meter recently overhauled, with 12 without batteries. Roget, 43 Willow Grove, North Kew, Vic. (WL 3604).

WANTED.—Instruction Manual for BC348 B, H, K, L or R O'Donnell, 52 Ryot Street, Warrnambool.

WANTED.—One Prop. Pitch Motor. T. Dick, 29 Dundas Street, Wellington, New Zealand.

WANTED TO BUY.—Transceiver AT84A or 12 volt D.C. ATR2 series. Lang, Titanga, Lismore, Victoria.

WANTED.—Type A Mk. III. Transceiver and Type 3 Transceiver, Class C Wavemeter. A. Carmichael, 17 Thomas Ave., Moorbabin.

WANTED.—Type A Mk. III. Transceiver in working order and clean condition. B. Bridger, 114 Lexton Street, Ballarat, Vic.

WANTED URGENTLY.—Final Tuning Coil and Condenser from AT75. Coil must include both end switches. Ron F. Hambridge, Yerrinbool, N.S.W.

IMPORTANT!

SOUND RECORDING & REPRODUCTION

by Godfrey and Amos

Published by "WIRELESS WORLD"

One of the best Books written on the Subject

Price **50/-** and **1/-** postage.

AVAILABLE NOW!

This is a Book no Amateur or Professional can do without

Obtainable from—

MCGILL'S AUTHORISED NEWSAGENCY

183-185 ELIZABETH STREET, MELBOURNE, C.I., VICTORIA.

(The G.P.O. is opposite)

Phones: M 1475-76-77

NATIONAL TRANSFORMERS

are produced by a specialised factory employing the latest winding techniques and embodying the best materials consistent with modern practice. They are used exclusively by many of the largest radio manufacturers and, with this recommendation, we have pleasure in releasing for the Trade a proven line of Power Transformers.

Check These Features—

- The possibility of lamination hum has been completely eliminated in the smaller types up to 50 Ma. by the use of sturdy one-piece cadmium-plated clamps of which the mounting brackets are an integral part; this has been achieved in the larger transformers by using metal covers and a one-piece clamp, both of heavy section to ensure absence of fatigue. Cooling louvres scientifically placed in the covers give maximum flow of air past winding—thus minimising temperature rise.
- Covers attractively finished with grey stoving enamel.
- A special anchoring method is used inside the core to prevent the leads being pulled out.
- Details of larger types available on request.
- Core impregnated with special varnish and baked to resist humidity. An electro-static screen is provided to further minimise the effects of modulation hum.

H.T.								Amateur List								
Type	Ma.	Volts	Filament	Ratings	Mounting	Price*	Price*	Type	Ma.	Volts	Filament	Ratings	Mounting	Price*	Price*	
U40/285	40	285/285	6.3v/2a	5v/2a	Upright	28/8	33/9	U80/285	80	285/285	6.3v/2a	6.3v/2a	5v/2a	Upright	39/8	71/5
F40/285	40	285/285	"	"	Flat	28/8	33/9	F80/285	80	285/285	"	"	"	Flat	39/8	71/5
U40/325	40	325/325	"	"	Upright	29/8	35/8	U80/325	80	325/325	"	"	"	Upright	40/8	79/8
F40/325	40	325/325	"	"	Flat	29/8	35/8	F80/325	80	325/325	"	"	"	Flat	40/8	79/8
U50/225	50	225/225	"	"	Upright	29/7	34/10	U80/385	80	385/385	"	"	"	Upright	42/8	80/-
F50/225	50	225/225	"	"	Flat	29/7	34/10	F80/385	80	385/385	"	"	"	Flat	42/8	80/-
U60/285	60	285/285	"	5v/2a	Upright	34/8	65/-	U100/285	100	285/285	6.3vct/2a	"	"	Upright	44/-	81/5
F60/285	60	285/285	"	"	Flat	34/8	65/-	F100/285	100	285/285	"	"	"	Flat	44/-	81/5
U60/325	60	325/325	"	"	Upright	35/3	66/1	U100/325	100	325/325	"	"	"	Upright	45/-	81/5
F60/325	60	325/325	"	"	Flat	35/3	66/1	F100/325	100	325/325	"	"	"	Flat	45/-	81/5
U60/385	60	385/385	"	"	Upright	38/-	71/1	U100/385	100	385/385	6.3vct/2.5a	"	"	Upright	49/10	93/7
F60/385	60	385/385	"	"	Flat	38/-	71/1	F100/385	100	385/385	"	"	"	Flat	49/10	93/7
All Primary Windings 230/240v.								All Primary Windings 230/240v.								
* Plus 20% S.T.								* Plus 20% S.T.								
+ Inc. Sales Tax								+ Inc. Sales Tax								

Distributed by:—

Please include Freight and Exchange with Orders

WILLIAM WILLIS & CO. PTY. LTD.

Established Over 80 Years.

428 Bourke Street, Melbourne, C.I.

Phone: MU 2426

HAMS! get super-efficiency
in your rig with

RAPID BAND-CHANGING
Q-MAX
FACILITIES

A range of Switched and Plug-in Tank Units manufactured by "Q-Max," of England. All Coils are heavily silver plated and designed for maximum efficiency.

A. 40 WATT SWITCHED TANK UNIT B4/40

This 40 watt single ended tank unit has four switched positions, supplied with plug-in coils and links covering 80, 40, 20 and 10 metres. The fixed link coils give maximum coupling on each band to a low impedance output. Complete unit (including coils and tuning condenser), as illustrated, £12/13/6 plus Sales Tax.

B. 150 WATT SWITCHED TANK UNIT WITH SWINGING LINKS

A complete switched P.A. Tank Assembly for five bands, operating at high efficiency and handling powers up to half a kilowatt, and voltages up to two kilovolts. The unit comprises a 60-80 pF. split stator condenser (0.002 inch spacing) over which a fire water ceramic switch with polythene rotor is mounted. The five coils for 20, 21, 14, 7 and 3.5 Mc. are fitted directly on the switch contacts. Swinging links have been incorporated for all bands to enable optimum loading and matching to be obtained. An output of 427 watts of RF was obtained at 28 Mc. with two 813s in push-pull loaded to 600 watts input. The complete unit is mounted on stand-offs, ready to go straight on to a P.A. chassis. Price £23/10/- plus Sales Tax.

C. TANK COIL UNIT MK. II.

A complete P.A. Tank Coil and Condenser Assembly for maximum efficiency on all bands with powers up to 150 watts and 2,000 volts high tension. The unit consists of a 60-80 pF. split stator condenser of 0.002 inch spacing with built-in 350 mA. RF Choke and 5 kV. by-pass condenser; Tank Coil and Swinging Link mounts, which take plug-in tank and link coils respectively, giving the most efficient combination for any band. This unit can be fitted with either one or two neutralising condensers for single end or push-pull operation. Complete unit as illustrated, £17/3/9, plus Sales Tax.



All Prices are F.O.R. or F.O.B. Melbourne. Sales Tax to be added

**SOLE AUSTRALIAN
FACTORY REPRESENTATIVES:**

R.H.CUNNINGHAM PTY. LTD.

C872

118 WATTLETREE ROAD, ARMADALE, S.E.3. CABLE "CUNNIG" MELBOURNE—TELEPHONE UY6274